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SPECIAL REPORT page 35

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Java SE 6 Satisfies The Early Adopters and handsome GUI applications.

Java releases used to be like the murderer in an Agatha Christie novel: occasionally appearing behind the fence or in the attic, but largely hidden until the end. Sun Microsystems' December release of Java SE 6, however, was

FEBRUARY 1, 2007 • ISSUE NO. 167

that arrived with much more frequency than in previous versions. Now, a month after the final version of the environment arrived, some adventurous early adopters are already crowing about better performance, easier debugging

Hani Suleiman, CTO of Formicary, a financial consulting and integrations firm and a member of the Java Community

Process, has been following the evolution of Java SE 6 closely. Even before the final release of the new version, Suleiman saw major improvements in the ways Sun prepared for the release.

"Gone are the days where we had to wait months for a beta drop," said Suleiman. "From very early on in the process, anyone could have grabbed the latest continued on page 30 ▶



Nicholas Kassem led a team of Sun engineers to Redmond to work on interoperability with Microsoft.

On WS-* Integration

Chutzpah was the word most used to describe Sun Microsystems' Redmond emissaries. When eight of Sun's enterprise Java engineers flew up to Washington state to collaborate with Microsoft's engineers, many industry watchers trotted out that venerable Yiddish word, which, loosely translated, means gall.

But as these two teams worked together to bring about some calm in the turbulent seas of Web services, they found that engineering knows no prejudice. The result, three years later, is Sun's Web Services Integration Technology, and Microsoft has called it the best implementation of the WS-* standards outside of its own.

In 2004, Nicholas Kassem, Sun's technology director for the enterprise Java platform, was given the task of understanding Microsoft's new Web services specifications.

"Going back to about 2004 when we kicked off this effort, the real intent was to provide firstclass interoperability between the Java platform of our products and [what became] the [Windows] Vista environment," said Kassem.

When Kassem arrived in Redmond, the Web services specifications being worked on therein were still behind closed doors. Kassem said that a major part of his job was to advocate the open-

Fortify to Acquire

continued on page 20 ▶

'This feels very sturdy, and since it was a more conservative update than Java 5, it probably is more sturdy.'

–Barry Burd, mathematics and computer science professor at Drew University

Veracode Understands What's At Stake

Security analysis tool searches for vulnerabilities in executables

BY ALEX HANDY

Old hackers never die, they just build new startups. Such is the fate of Boston hacker collective, L0pht, the remnants of which formed a new company, Veracode, last March. That company's first product, also named Veracode, is an on-demand binary security scanning tool designed to help developers ferret out potentially exploitable vulnerabilities before they can be discovered by nefarious coders in the wild.

Veracode began life as a project of AtStake, the professional consulting firm that evolved out

of the L0pht. That hacker collective is best known for its L0phtCrack tool, a Windows password cracking program that is still used today by the National Security Agency and other U.S. government agencies. Chris Wysopal, Veracode's CTO, and Christien Rioux, Veracode's chief scientist, both began working on the Veracode analysis tool in 2002, after forming AtStake, which was purchased by Symantec in 2004.

Now, after five years of development, the Veracode tool will surface for the first time at continued on page 29 ▶

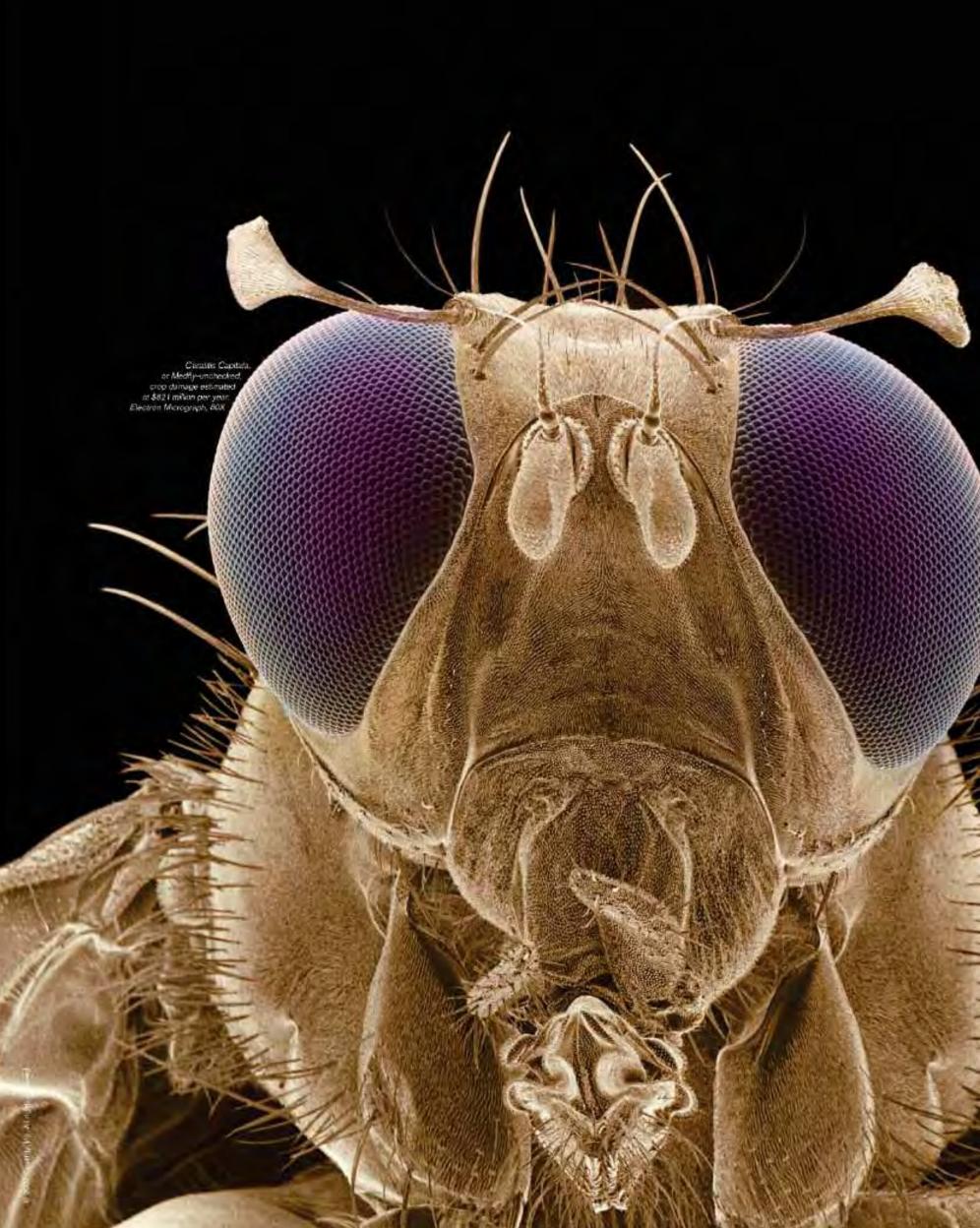


After uploading a binary to Veracode.com, users can track vulnerabilities and bugs found, then move them into their own bug-tracking databases.

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SOATest at Your (Quality of) Service

Version 5.0 sports new metrics, granular XML message testing

BY ALEX HANDY

Parasoft's SOA testing solution can now evaluate services for quality and speed. With version 5.0 of SOATest released on Jan. 29, the company has added more granular controls for the testing of XML messages as they pass through a network, as well as new facilities for evaluating the quality of service given in a SOA environment.

Parasoft's vice president of strategy and corporate development, Wayne Ariola, said that SOATest can be used right from the start of a SOA project. Once a development team begins building code on top of business requirements, said Ariola, SOATest 5.0 can be used to build functional tests that evaluate whether or not those requirements are met.

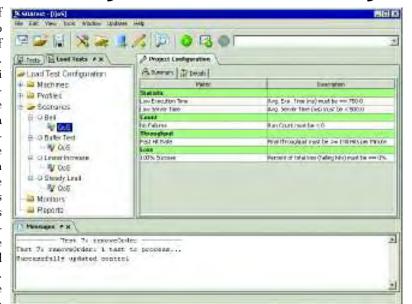
"It allows the tests built early in the development cycle to allow the QA group to extend the end-to-end scenarios," said Ariola.

New to version 5.0 of SOATest is the ability to monitor the quality of services being offered. According to Rami Jaamour, product manager of SOATest, the new edition includes a graphical tool for selecting quality-of-service metrics, against which tests can be built. These include such variables as the number of failures and successes encountered, or the time between submission and reception of a request. "Once you define these graphically, you can run whether your applica-

tion has satisfied these metrics or not," said Jaamour.

Elsewhere in version 5.0, Parasoft has attempted to bridge the gap between functional and unit tests.

"One of the main technolo-



your load and verify SOATest now offers a graphical interface for building quality-of-service tests.

gies we're introducing allows you to have visibility into the different layers of an application," said Jaamour. "With the complexities we are seeing in SOA environments, it's becoming more and more difficult to isolate problems unless you have something that bridges the functional side of things and the detailed code side of things."

He went on to say, "We have an agent that can be dropped into a Java-based

server that allows you to run the functional tests and at the same time trace the code execution in the server." That execution can be recorded and then imported into Eclipse, allowing developers to build newer, more specific JUnit tests that can help to narrow down the source of a problem, he explained.

SOATest 5.0 costs US\$4,000 per seat. It runs under Linux, Solaris or Windows, and includes both a server-side monitoring system and a rich-client-based interface for creating tests.

Ariola stated that future versions of the software will likely include the ability to bring coding policies defined in SOATest into an Eclipsebased IDE, thus forcing developers to adhere to standards while coding. Currently, these SOATest design-time policies are enforceable only through the nightly test and build process.

Without DARPA Funds, Sun Opens Fortress

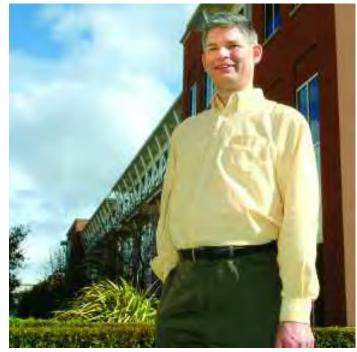
Focus is now on creating a parallel Fortran replacement

BY ALEX HANDY

Sun Microsystems' Fortress is now open source. In early January, this next-generation parallel programming language was made available in the form of an alpha release that includes an interpreter but not a compiler. Future releases of Fortress will likely include the contributions of interested developers, as Sun has spent a great deal of time making Fortress amenable to the addition of new libraries.

Sun fellow Guy L. Steele Jr. said that Sun's initial goal of winning a phase-three DARPA contract for the development of Fortress has now been replaced with the goal of creating an open source, massively parallel Fortran replacement. When Sun found that it hadn't won the DARPA contract in November of last year, Steele said that the company decided to continue working on Fortress primarily because of its past successes with Java.

Said Steele: "Fortran is an array-oriented language. Fortran historically supported up



The Fortress team currently is working on building out the extensible infrastructure of the language, says Sun's Steele.

to nine dimensional arrays, and as of 2003, it supported up to 15 dimensions in an array." Fortress, said Steele, is built to accommodate an unlimited number of dimensions in an

array, and is fenced in only by available memory.

Fortress was developed as a response to DARPA's request for a secure programming language. As a result, Fortress was built on some of the same underpinnings as Java. "Like Java, and unlike Fortran or C++, you can't violate the basic data types of the language," said Steele. This means developers writing Fortress code can't create some of the more common exploitable holes that come from sloppy coding.

While this initial release is only an alpha, and does not include a compiler, future releases will, said Steele. He added that the six members and one intern working full-time on Fortress have released a new specification for the language every two months. The team is also working on experimental code that shows off the abilities of Fortress.

AIMING HIGH

Currently, these experiments are benchmark-oriented, and include such examples as Gyrokinetic Toroidal Code (GTC). Steele said that creating GTC in Fortress is an attempt to match the performance of similar code written in Fortran, but with significant ease-of-use advances for the coder. GTC

attempts to simulate the movement of particles inside of a plasma generator regulated by a doughnut-shaped electromagnetic field.

Heavy stuff for a language that's not even compilable yet. But Steele and the Fortress team have been aiming high right from the start. Steele said that a considerable amount of time is currently being spent on allowing for the future addition of libraries. As such, much of the current work done by the Fortress team is focused on building out the extensible infrastructure of the language.

And that infrastructure is likely to see a great deal of interest from the open source community, said Steele. In the week since Fortress' initial alpha release was made public, Steele claimed that the project's Web site saw 18,000 visitors.

While none of those visitors will be compiling their Fortress code anytime soon, they are certainly able to play around with the syntax and structure of the language. And a powerful new language is always good for business, said Steele. "Java was a good thing for Sun, not because Sun made money directly off of Java, but because it grew the entire market." ■

Software Development Times , February 1, 2007

NEWS BRIEFS

Versant, which sells data management software, has become a sponsor at ODBMS.org, a not-for-profit group that publishes educational materials on object database technologies. Robert Greene, Versant's VP of product strategy, has been appointed as an expert to the group's panel of contributors.

NEW PRODUCTS

WIBU Systems USA has released its new CodeMeter software protection hardware device. This software-access USB device, called the CM-Stick, is different from previous USB hardware encryption keys, or "dongles," because it can unlock multiple applications if the developers using it so desire. The company hopes its new dongle will enable developers to use a single device with multiple applications, rather than a separate stick for each program. The hardware comes with 128KB of secure memory. WIBU devices are available on a perdevice basis, and require no royalties. Future versions of CodeMeter will include the hardware device as a PCMCIA card and as a PCI

UPDATES

Legacy software modernization company Seagull Software has released version 4.1 of its BlueZone Access Server, which provides HTML and thin-client terminal emulation for IBM mainframes. New to this release are wizards for HTML page editing and quick configuration, a new HTML emulation client and an HTML style sheet for the HTML client for easy customization . . . SpreadsheetGear has made available SpreadsheetGear for .NET 2006 2.5. a royalty-free Microsoft Excel-compatible spreadsheet component. The new release supports cell comments, data validation, pictures, text boxes, form controls and autoshapes, according to the company . . . SmartDraw 2007 (release 8.1), the business graphics design tool updated in January, offers more complex graphical effects, such as color transparency for use in venn diagrams; support for Tablet PCs; and automatic connection completion when elements are deleted from a diagram . . . Pegasystems has released version 5.2 of its SmartBPM Suite with new Adobe Flex-based visualization to help users improve the performance of their business processes with the use of rich graphics. SOA integration testing and accessibility also are among the more than 60 new features the company says it has built into this release . . .NET software component provider Codejock Software has updated its Xtreme ToolkitPro and Xtreme SuitePro, with an Office 2007-style RibbonBar, RibbonBar screen tips, CommandBar and Windows Vista-style skins among the new features. It also boasts a new syntax edit control based on the Visual Studio .NET syntax editor.

PEOPLE



David Worthington has joined the staff of SD Times as an associate editor. Worthington has covered the technology industry for more than six years, and has written for Ziff Davis' eWeek and BetaNews.com. He holds a B.B.A. from Temple University . . . Rich Internet application technology pioneer ActiveGrid has named

Christopher Keene chairman and CEO, Keene in 1991 founded data management company Persistence Software, which was sold in 2004 to Progress Software. ActiveGrid founder Peter Yared will continue as CTO ... Roger Sullivan, VP of Oracle Identity Management, has been elected president of the Liberty Alliance Management board. Sullivan served as VP for the past two years. Jason Rouault, CTO of Identity Management at HP, has been elected the new VP . . . db4objects, creator of the open-source object database db4o, has named German Viscuso as global community host. Viscuso will act as liaison between the company and the opensource community for the db4o project, which now has more than 18,000 registered users from 120 countries. ■

Java Data Mining 2.0 API Heads Toward Finalization

Spec overhaul adds transformations, simplifies models

BY ALEX HANDY

In the end, it's all just data. When ISR 73 was completed back in 2000, it was the first time Java developers had a clear path to spelunking through their databases without digressing into another language or platform-specific API. Now, seven years later, the Java Data Mining specification is closer than ever to receiving a complete overhaul. ISR 247, the Data Mining 2.0 API, is on the last leg of its journey through the Java Community Process, and could be finalized before the end of 2007.

Mark Hornick, senior manager in the Oracle data mining technologies group and specification lead for JSR 73, began work in 2004 as the specification lead on ISR 247. Since that time, the new API has passed its public review ballot and began heading toward its

"Java developers prefer to write Iava and not to map to other languages. We provided explicit object representation in JDM 1.0. Developers no longer needed to reinvent the mapping of various data components returned from non-Java APIs," said Hornick of his previous JSR. But despite the benefits of JDM 1.0, Hornick said that there was a lot of room for improvement in JDM 2.0.

SIMPLIFY, SIMPLIFY

He said that one of the major themes in Data Mining 2.0 is simplification. "We wanted to minimize repetitive specifications. Imagine a genomic data set of 5,000 genes. You want to normalize the data so that all values are between 0 and 1. Of course, you want to do this without having to list every single value. You shouldn't have to write 5,000 lines of code specifying every asset," said Hornick.

Before JDM 2.0, that might not have been so easy to do. But version 2.0 adds transformation functions that can handle such actions with aplomb, said Hornick.



One of the major themes in 2.0 is simplification. 'We wanted to minimize repetitive specifications."

— Mark Hornick, senior manager in the Oracle data mining technologies group

"Eighty percent of your time is spent on transformations, while 20 percent is spent on modeling, and the fun part is the modeling," said Hornick of the reasons behind adding transformation capabilities to Java Data Mining 2.0. "So the data preparation part of the data mining interfaces allows you to perform data transformations, such as outlier treatment. We also allow the specification of expressions that can incorporate SQL commands," said Hornick.

"We had the notion that in a database environment you have all your info in that database," said Hornick of the optimized data retrieval and extraction model in 2.0. "All you should need to do is pass to the database the customer ID and the model you want to score. So that's an optimization we included in 2.0. You can specify the identifier of the case you want and the model you want, and then you get the score back for that without having to retrieve that a second time."

The new specification also includes facilities for mining text, though Hornick stated that the myriad methods of analyzing text necessitated a loose framework.

"You can identify a column as being text, and we'll go through and do the term extraction for that and include the results with the remaining structure data. You can mine that and include that as part of the predictors for a given model," said Hornick. "We leave it up to the vendors' creativity to decide what they want to do [from there]." Hornick stated that further text analysis capabilities were numerous, but that the technical committee of JSR 247 decided to stop here.

"In the future it might be appropriate to go to the next step and say, 'How do we want to extract from those?" said Hornick.

PRACTICAL APPLICATION

As for possible real-world uses of the new Java Data Mining 2.0 API, Hornick saw many potential targets. "Data mining is widely applicable in many different industries," said Hornick. "It's useful in life sciences, where you need to perhaps understand what is the likely outcome of a procedure for a patient. Real-time scoring is useful in retail, for example. Imagine you have a call center application, and you want to understand, 'What are the products I should be offering to this customer?"

Hornick added that retail and customer service applications could be modified to determine whether or not a customer is likely to cancel a subscription, or switch to a competitor. Thanks to the enhanced real-time scoring capabilities added in IDM 2.0, said Hornick, all of these things can be determined while the customer is still on the phone.

While the JSR 247 Web page lists June as the goal for completion of the specification, Hornick could not predict when the final draft will be ready for a vote, due to the busy schedules of those involved in the project.

One thing Hornick could predict, however, was that Oracle would be releasing software based on the new specification. ■

_INFRASTRUCTURE LOG

_DAY 15: This project is out of control. The development team's trying to write apps supporting a service oriented architecture...but it's taking FOREVER!

_DAY 16: Gil has resorted to giving the team coffee IVs. Now they're on java while using JAVA. Oh, the irony.

_DAY 18: I've found a better way: IBM Rational. It's a modular software development platform based on Eclipse that helps the team model, assemble, deploy and manage SOA projects. The whole process is simpler, faster and all our apps are flexible and reusable. :)

_The team says it's nice to taste coffee again, but drinking it is sooo inefficient!





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EWS , Software Development Times , February 1, 2007

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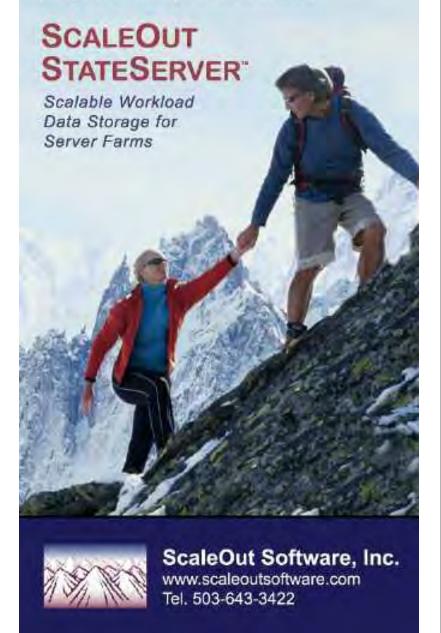
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UBL 2.0 Wins Approval From OASIS as Specification

Business language gets 23 new document types

BY JEFF FEINMAN

UBL 2.0, the Universal Business Language that provides users with a set of XML-based electronic document schemas, was approved as an OASIS standard last month. This version of the specification adds 23 new document types to UBL.

OASIS is an umbrella organization for a number of XML standardization efforts. Founded in 1993, the not-for-profit group creates specifications for Web services and e-business.

As a large portion of the funding for the new UBL schemas has come from the government of Denmark, Danish businesses are required to comply with UBL regulations. Denmark will be deploying 12 UBL documents into the private sector in 2007, with eventual savings to the country's businesses estimated at €550 million-€700 million annually.

The United States, meanwhile, has used UBL schemas as the basis for the Electronic Freight Management initiative, which is currently under development by the U.S. Department of Transportation. The EFM is a project focused on improving speed and accuracy of freight movement through methods such as standardizing information exchanges between supply chain

"With respect to the use of UBL for the EFM project, I understand the decision was based on selecting an international and open standard that covered their requirements and was also mature and stable enough to implement," said Tim McGrath, vice chair of OASIS. "The U.S. [Dept. of Transportation] team have been very helpful in reviewing the UBL documents and, in fact, helped us develop the Transportation Status document standard that forms a major part of EFM."

According to Jon Bosak, distinguished engineer for Sun Microsystems, development of UBL first began in 1997 with the creation of the Common Business Language 1.0, followed by two more releases in 1999 and 2000. Sun eventually organized an OASIS technical committee to create an appropriate standard XML type for e-business. The first two versions of UBL, 0.7 and 1.0, were released in 2003 and 2004, respectively. ■

Simultaneous Crawl And Audit New to WebInspect

SPI Dynamics announced on Jan. 29 the release of WebInspect 7.0, the latest upgrade of the company's application security assessment tool.

According to the company, the key new feature is simultaneous crawl and audit, which allows a tester to audit the application while running the crawl at the same time. WebInspect 7.0 also offers WebInspect 7.0 redefines the ability to run multiple app auditing, claims Sima. simultaneous scans from a

single scanner and offers evolved state management to eliminate complexities of Web site authentication such as twofactor and Captcha, authentication protocols. All of this has made scan runs faster by at least 50 percent, the company claims.

"No Web application scanner today works in this fashion," said Caleb Sima, CTO and founder of SPI Dynamics. "We've made the way that auditing in an



application works completely different."

To make these new features possible, SPI Dynamics redesigned the product's engine with more capability to handle today's Web applications. Improved coordination between auditing and crawling and the ability to hand off information were also important ingredients.

"It's not easy making an automated product act like a user, and that's one of the key things we had to do to

get this architecture in place," Sima said. "Think about the last Web application that you logged into, whether it's your bank or something similar to that, and the route that you take and the complex choices that you make while clicking on things. It's a very difficult thing to make an automated product do that properly, and with all the technology involved in that, [it] requires a lot of work, and that's what we've put into this new version."





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Survey Suggests Offshoring Benefits

BY DAVID WORTHINGTON

Offshoring is a contentious topic that invokes strong opinions, but the reality is that software development has already become a process that spans the globe. The Software & Information Industry Association (SIIA), an industry trade association, has released a report that concludes global software development is bene-

ficial to business growth, and is on the rise.

Some of the report's highlights reveal that a vast majority of those surveyed consider offshore work to be an "important" or "critical" driver for their growth strategies.

Respondents indicated that cost savings met projected goals and had a positive impact on profits.

However, gains in productivity did not always match expectations. The report cites members' experiences that productivity is hampered when either party underestimates the amount of effort and adaptation necessary to make offshore development work. The governing construct is that partnerships are long-term and should not be viewed as quick, cost-cutting measures.

Companies that send development offshore have not coalesced onto a single business model that achieves optimum results. Approximately half of businesses surveyed work directly with an offshore provider, a third operate a subsidiary, and the remainder employ a hybrid model.

SIGNIFICANT RISE

The report indicates that offshore work has increased significantly over the past 18 months among 57 percent of those sampled. What's more, those same companies are trending toward offshoring more work over the coming 18 months.

Not every company surveyed exhibited readiness to embrace offshoring. Fear of losing control is identified as the leading reason why some companies choose not to. The lagged response was nearly unanimous with 91 percent stating it was a "somewhat" or "very" important factor against outsourcing work.

The basis for the report's findings is a survey that was sent to a random sample of SIIA members, establishing a limited probability sample of 114 respondents.

Statistically speaking, the sample may not be reflective of the industry as a whole due to the small sample size taken.

When questioned about this, an SIIA spokesperson told SD Times, "While not statistically projectable to the software development industry as a whole, we believe the findings are highly indicative of the overall trends in the software and technology industry."

SIIA's survey was conducted in partnership with Symphony Services, a purveyor of outsourcing services. Symphony assisted in the development of the survey form and analysis, but did not finance the work.

A copy of the report is available at www.siia.net/software.



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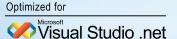
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NEWS

Ruby In Steel Forges Ahead

Add-in software brings Ruby coding support to Visual Studio 2005

BY ALEX HANDY

When Huw Collingbourne and Dermot Hogan started programming in Ruby, they felt something was missing. "We really missed Visual Studio," said Collingbourne of the code-completing, syntax-highlighting IDE. Thus, the pair formed SapphireSteel Software to bring Ruby coders into Microsoft's venerable IDE in the form of an add-on. In early January, the developer edition of Ruby In Steel arrived, offering IntelliSense support for Ruby for US\$249 per user.

'OVER 9,000 DOWNLOADS'

For the past year, Colling-bourne, SapphireSteel's technology director, and Hogan, its chief architect, have been generating buzz through preliminary releases of the personal edition of their software. Ruby In Steel Personal Edition has already had more than 9,000 downloads, claimed Collingbourne, and most of those have been from the United States.

That personal edition is still free but does not include some features, such as a fast debugger, smart indenting and IntelliSense support.

Collingbourne said that IntelliSense support was both a blessing and a curse during development.

"IntelliSense poses some special problems when working with a language as dynamic as Ruby," said Collingbourne. "In languages such as C# or C++, the type of each variable has to be declared before it's used. That makes it easy for an IntelliSense system to determine the appropriate methods to display in a code-completion list. In Ruby, not only are the types of variables not declared, but just to add to our problems, each variable can take on many different types in the course of a single program. In order to get good, meaningful Intelli-Sense, we effectively had to build our own Ruby interpreter to analyze the code as it is being entered."

Collingbourne said that the toughest part was working with the largely nebulous areas behind Visual Studio. "Integrating a language into Visual Studio is extremely complicated.

You have to make use of numerous COM interfaces, a great many of which are poorly documented," said Collingbourne. The fast debugger, nicknamed Cylon, is another of Collingbourne's favorite children. "The default Ruby debug-

ger is notoriously slow. We believe we have, quite simply, the fastest Ruby debugger around. In the first release, it is limited to working in 'single threaded' mode. We will release a multi-threaded version of the debugger in a forthcoming update, and we still expect it to be the fastest there is," said Collingbourne.

That update will be free for registered users, Colling-bourne added. ■

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Orchestration Strikes Chord at TIBCO

TIBCO Software stepped into the business process orchestration pit last week with the release of BusinessWorks 5.4, which offers what the company claims is the industry's first support for BPEL (Business Process Execution Language) 2.0, in an implementation of the OASIS WS-BPEL 1.1 specification. By integrating orchestration with the BusinessWorks ESB, the company claims the new release enables visibility into process execution, allowing exceptions to be handled more smoothly than might otherwise be the case.

BusinessWorks 5.4 also includes the ability to maintain

Logi 8 Gets AJAX, .NET Update

BY DAVID RUBINSTEIN

LogiXML in mid-January released Logi 8, the first update to its pure Web-based reporting platform in two years, that is now AJAX-based and compliant with Microsoft's .NET 2.0 Framework.

The Logi 8 platform consists of the managed reporting tool Logi 8 Info, ad hoc and OLAP reporting tools, and Logi 8 Mart, which can extract data from different sources to serve into reports, according to company founder and CEO Arman Esraghi. "We rewrote the ad hoc reporting to make it more expandable," he said. "It now uses different reporting components, such as charts and data visualization, so the emphasis is on the presentation part."

Logi 8 Info, which is used by developers to build reports, now has AJAX dashboards that can accept panels from different data sources for creating analysis grids in more interactive ways, Esraghi explained.

Also new in this release is an enhanced PDF rendering engine that processes HTML to PDF based on style sheets, so the rendering will be predictable.

Esraghi described the introduction of the iPhone by Apple CEO Steve Jobs at January's Macworld as "revolutionary. It's a full version of the Safari browser on a mobile phone. Any Web site you can run on the Macintosh, you can run on the phone." This, he said, could create more opportunities for businesses to deliver Webbased information to the field. \blacksquare identity management systems throughout a BusinessWorks process, through the use of modular security architecture. The company expects that enhancements to the data transformation

improve performance in realworld use.

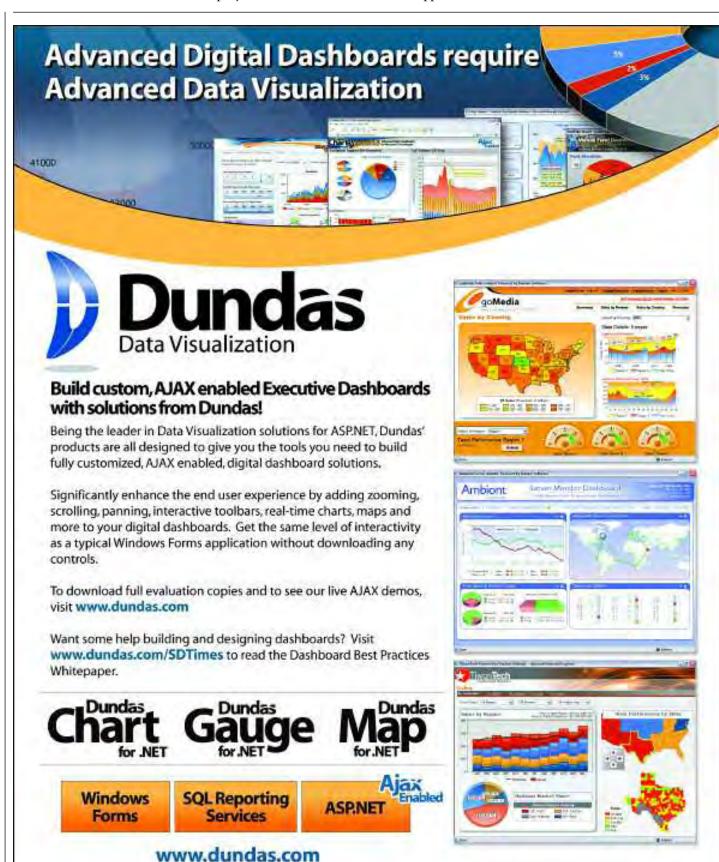
BusinessWorks 5.4 also allows the monitoring of distributed transactions with the company's Hawk and Enter-

tools; in-flight transactions and transaction metrics can be analyzed for process optimization or troubleshooting.

The new version also includes support for a number of

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64-bit operating-system platforms, including AIX, HP-UX, Linux and Solaris. It also adds the latest revisions of Microsoft SQL Server and Oracle 10g to the list of supported relational database management systems, as well as Jakarta 3.0.1 and Tomcat 5.5 from the Apache Software Foundation.



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For Manufacturers, Manual Processes Rule

Study finds only 8 percent rely solely on technology for compliance

Most manufacturers still rely on manual processes to comply with government mandates.

"Compliance and Traceability in Regulated Industries Benchmark Report," published by

That is the key finding of the Aberdeen Group in late December. Only 8 percent of the manufacturers surveyed have eliminated pen and paper or manual spreadsheet programs for the compliance and traceability programs, the study found. Furthermore, only 24

percent of manufacturers surveyed have implemented technology solutions with both production process visibility and automated traceability functionality, according to the report.

Automating compliance efforts is likely to become increasingly important, given the growing number of regulations to which manufacturers are subject.

Some mandates, such as the Clean Air Act, which originated in 1963, apply across all manufacturing sectors, noted Aberdeen analyst Matthew Littlefield. Others vary by industry. For example, pharmaceutical firms must adhere to Food and Drug Administration regulations. And car makers must comply with a set of rules known as TREAD (for Transportation Recall Enhancement, Accountability and Documentation) to trace where auto parts came from. Another recently enacted regulation is the Bioterrorism Act of 2002, which mandates, among other things, that food and beverage companies report who they buy from and who they sell to, Littlefield said.

Companies that use technology are more likely to achieve higher rates of compliance, he said, citing a key conclusion of the report, which was underwritten in part by companies that sell software to manufacturers, including Cincom, IQS, MasterControl and SAP.

The report found that the top 20 percent of those surveyed achieved compliance rates of 98 percent, Littlefield said. Findings were based on a survey of 340 companies in the pharmaceutical, medical device, food and beverage, aerospace and defense, automotive and other industries. Companies that achieved high rates of compliance had integrated compliance and traceability measures with production processes, and with enterprise applications, including ERP (Enterprise Resource Planning) systems, QMS (Quality Management Solutions) and MES (Manufacturing Execution Systems), Littlefield said.

A key reason why manufacturers have been slow to automate compliance efforts is that such efforts have traditionally been viewed as a "cost of business," the report said. But that perception is changing. When compliance and traceability efforts are integrated with enterprise applications, manufacturers can gain a competitive advantage, Littlefield said.

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Dynamic Web Remoting: RMI for the Web

Software based on 2.0 spec facilitates Java communication with JavaScript

BY ALFX HANDY

DWR is the acronym for Dynamic Web Remoting, a project aimed at giving Java developers a way to interact with the JavaScript that makes browser interactions more functional. Version 2.0 of the DWR project is nearing completion, and should be available as you read this.

Joe Walker, an independent developer and consultant behind the DWR effort, said that DWR provides an easy path for developers looking to build sites with Java behind and JavaScript in front. "Given a small amount of configuration, you can use Java functions in JavaScript almost exactly as if they were in the browser, and not on the server, and in reverse it allows the server to asynchronously execute JavaScript on the client," said Walker.

DWR consists of a Java servlet on the server that processes requests, JavaScript running in the browser that sends the requests and can dynamically update the Web page. DWR generates JavaScript based on Java classes, but the server is executing the code, according to the Web site getahead.ltd.uk, Walker's Web site that hosts the DWR software and effort.

NEW REVERSE CAPABILITIES

The new version of DWR adds reverse AJAX capabilities, with comet (long-lived), polling and piggybacking methods of asynchronously transferring messages. These new reverse capabilities are refined to lessen the bandwidth burden on servers said Walker.

Also new to this version are security features that Walker claimed will help to prevent cross-site scripting attacks, as well as cross-site request forgery exploits. Version 2.0 also adds the first code to generate JavaScript from a Java API.

Walker added that DWR is flexible enough to be used in a pen. You can think of DWR as RMI for the Web," said Walker,

Invocation.

DWR will also work with JSP and JSF, said Walker. These existing Java Web faculties aren't required, however. "It's

not an either/or," said Walker.

TIBCO Software is kicking money and work to the DWR project, and likely will integrate it with the TIBCO General

Interface software.

"We have many customers already using DWR with the General Interface Ajax library," said Kevin Hakman, TIBCO's

director of product marketing. Walker expressed a hope that the TIBCO funding would help to push DWR further into the RIA space. ■

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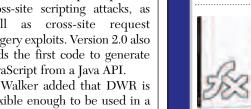
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variety of different models. "A lot depends on how you want to work," said Walker. "DWR will support having a totally clientside data model, and syncing infrequently, or you can use it to publish changes as they hapreferring to Remote Method

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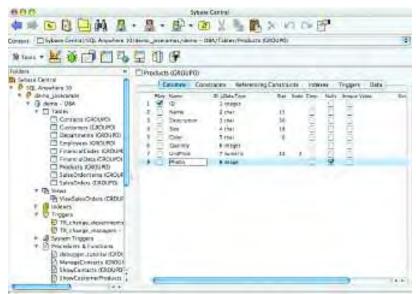
SQL Anywhere 10 adds support for AIX, HP-UX, Mac OS X, Solaris; now runs on Itanium hardware

BY P. J. CONNOLLY

Recognizing the increasing use of Apple hardware and software in high-performance, front-line environments, Sybase's iAnywhere subsidiary used January's Macworld Conference and Expo in San Francisco as the launch site for a version of SOL Anywhere 10 that runs on Intel-based Macs, including a free Developer Edition of SQL Anywhere 10 for Mac OS X.

Sybase's announcement claimed this to be the first database to offer bidirectional synchronization between enterprise database servers and databases on Apple's new hardware platform. SQL Anywhere allows developers to use a variety of development tools in creating powerful applications that require multiple data access interfaces.

Sybase iAnywhere's definition of the "front lines" is broad: It embraces the obvious cases of the mobile user armed with a



The GUI front end in SQL Anywhere 10 for Mac OS X allows developers to have fine-grain control over the customization and optimization of a database.

laptop or other personal device and the branch or remote office scenario, but goes further, according to Chris Kleisath, senior director of engineering for Sybase iAnywhere. The small- or medium-size enterprise that lacks a dedicated IT

staff is included as a "front lines" example, as is the instance where the database is embedded inside an application; Kleisath pointed out that Intuit QuickBooks uses SQL Anywhere under the hood.

The new release takes ad-

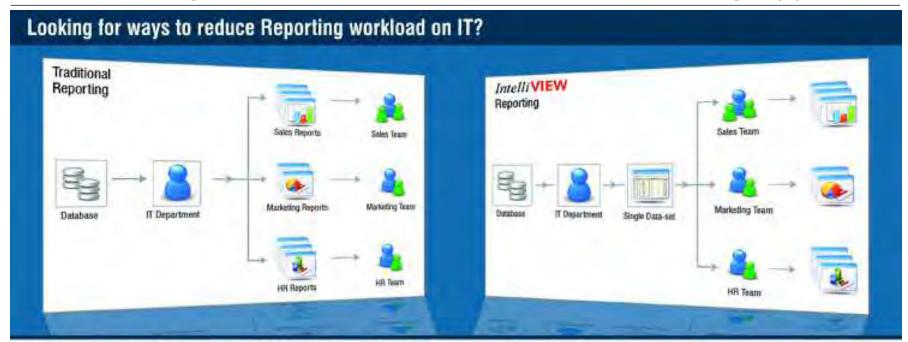
vantage of the Intel Core2Duo processors that Apple began using in its hardware last year, Kleisath noted. "On the new machines that have dual-core processors, this will enable one query to be split across both of those processors, for better performance."

He also observed that iAnywhere "fits in quite nicely with the target market for the Mac," people who want computing power but want it in an attractive, accessible package.

MORE PLATFORMS

At the same time, Sybase iAnywhere announced that SQL Anywhere 10 had been released for a number of other platforms, including Itanium for Linux and Windows, HP-UX on Itanium and PA-RISC, Solaris for SPARC and x64, AIX and Novell Netware. It had previously been released for Windows Mobile, and both Linux and Windows on x86 and x64 hardware. Palm OS and Symbian OS devices are supported through the SQL Anywhere UltraLite database management system, which also runs on Windows and Windows Mobile and uses SQL Anywhere MobiLink for synchronization with enterprise databases.

To address the needs of Svbase iAnvwhere's overseas customers, the subsidiary announced that French and German versions of SQL Anywhere 10 with fully localized documentation, packaging and software are now available, and also confirmed plans to provide fully localized Japanese and Simplified Chinese editions of the product in a forthcoming maintenance release. Key software components of SQL Anywhere have been localized for a number of Asian and Indo-European languages.



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Oracle Updates Free SQL Developer Tools

Package lets users browse third-party databases, adds version control support

BY P. J. CONNOLLY

The nice thing about free developer tools is that they fit within everyone's budget, but the downside is that the providers may not refresh the codebase often enough for the giveaway to retain its usefulness. Oracle seems to have learned that lesson, as seen in the latest update to the free Oracle SQL Developer.

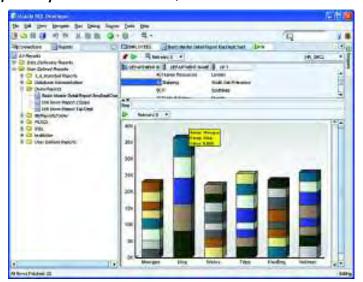
SQL Developer provides its users with a graphical front end for database development. The package includes an object browser, report creation and generation tools, and script and statement generators. The new release now allows users to browse data in third-party databases, including Microsoft's Access and SQL Server, as well as MySQL, using extension technology from the company's forthcoming Migration Workbench.

Sue Harper, senior principal product manager at Oracle, explained that SQL Developer was meant to be a simple yet

powerful supplement to the command line: "The idea was to provide a tool that's a quick install, quick to start using... and has a lot of drag-and-drop functionality." The need for such a tool must have been acute; according to Harper, the 1.0 release had been downloaded 394,000 times between March and December 2006, placing third among all downloads from Oracle's Technology Network.

The new release of SQL Developer has a myriad of small enhancements, but Harper pointed to the tool's new interoperability with version control systems as a particularly useful improvement. "We've added what we call 'file-based PL/SQL support,' which means that they can open their files in SQL Developer, make their changes to the code, compile it [if necessary], and then check it back in."

Another major improvement Harper cited was the Object Navigator, the back end of



The new report options in SQL Developer 1.1 provide detailed views into data, as in this master detail report.

which was completely rewritten for the new release. She claimed that now, "users can filter objects quite easily," a feature especially important to application developers.

Reporting also got some attention in the new release, Parker observed. "We've added the ability in 1.1 for

users to create what we call 'Master Detail Reports,' and to have charts, giving users a chance to see the impact of their data, or the way it is laid out," Parker said.

The new release, SQL Developer 1.1, runs on Linux, Mac OS X and Windows, and works with Oracle Database 9i

Release 2 and the Oracle 10g database family.

LOOKING AHEAD

Harper also noted that another release of SQL Developer is expected for late this year. The planned release will focus on support for the forthcoming Oracle 11g database, she said: "We would like the users of SOL Developer to be able to take advantage of the 11g features" as early as possible.

Oracle also announced its latest developer community site, the SQL Developer Exchange. Accessible at sqldeveloper.oracle.com, the site features the customary array of code snippets, development team blogs and forums for community discussion.

"We're asking [developers] questions: What aspects of the product are they using, what do they like or not like, and we're taking that information and trying to roll it back into the product," Harper explained.

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Salesforce's Apex On-Demand Platform Comes Out

BY JEFF FEINMAN

Salesforce.com has released its new on-demand platform and the Apex language, which is used for constructing ondemand applications inside of its AppExchange system. The ApexConnect platform encompasses a feature set for building business applications such as data models and objects to manage data, a workflow engine for managing collaboration of data between users, a user interface mode for handling forms, and the Apex Web services API for mashups and integration with other applications.

Apex will run completely on Salesforce.com's service. Its platform has a multi-tenancy feature, which means it can ease the hosting of application information within back-end databases. The platform has a single infrastructure and a centrally maintained codebase that can be shared by all users and upgraded simultaneously, according to the company.

"Now you can create the next Salesforce.com," said Marc Benioff, chairman and CEO of Salesforce.com.

The Apex language, which was introduced by Salesforce.com in October 2006 for developer preview, can be used to build applications from scratch and then expose them externally as Web services. Additionally, the language can be used to supplement existing Salesforce.com applications and to customize their functionality.

Salesforce.com will be introducing new services for hopeful software-as-a-service vendors throughout 2007, including development support, venture capital solicitation and even the option for developers to rent a cubicle in Salesforce headquarters for US\$20,000 per year.

Symantec Creates Dashboard For Performance

BY JEFF FEINMAN

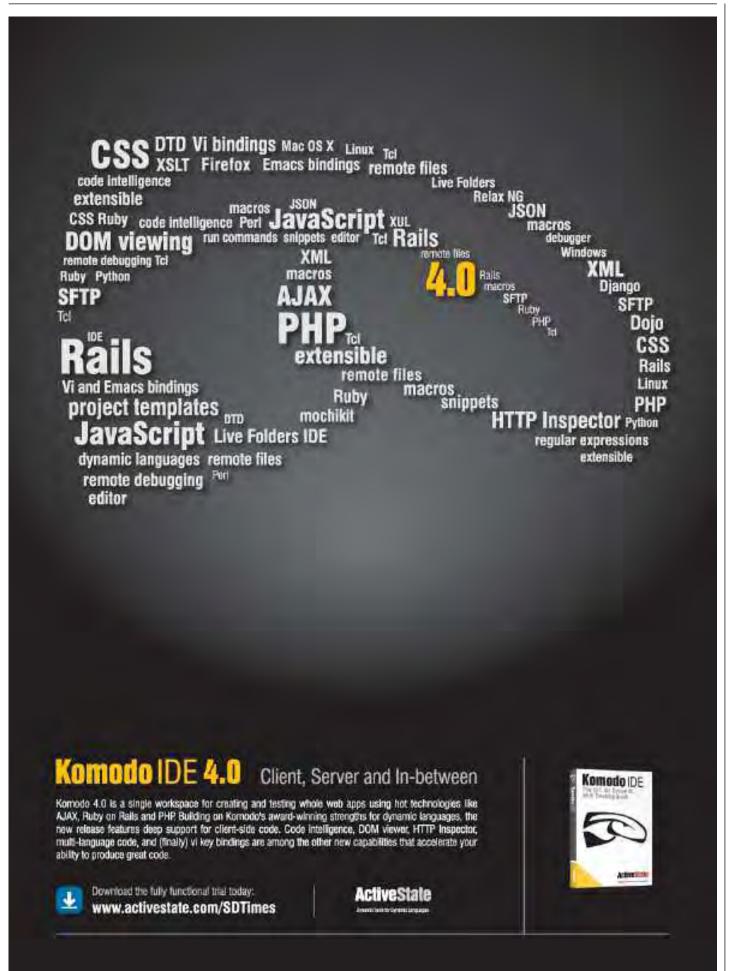
Symantee has announced that it has expanded its Application Performance Management portfolio by adding an Application Service Dashboard, which integrates monitoring analysis viewpoints onto a single screen.

The information security company also announced the newest version of Symantec Insight Inquire, its monitoring solution.

The Application Service Dashboard can be customized to a specific job function, and can also display the performance of multiple applications in a consolidated environment.

Insight Inquirer provides agentless, real-time monitoring by using synthetic transactions, which are browser-based recorded transactions. "It is quick time-to-value as far as what's going on with my application; it is running and looking at it from a 24x7 perspective," said Rob Greer, director of product marketing for Symantec's Server Foundation and APM products.

One of the newest enhancements to Insight Inquire 3.0 is an embedded database, so it no longer depends on Oracle or Sybase for the product's performance and availability metrics.



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20 | NEWS | Software Development Times | February 1, 2007

www.sdtimes.com Fortify to Buy Competing App Security Firm

BY JENNIFER DEJONG

In what may be the first sign of consolidation in the application security market, Fortify Software in mid-January announced plans to buy a competitor.

The Palo Alto, Calif.based company has entered a definitive agreement to acquire McLean, Va.based Secure Software. The terms of the sale were not disclosed, but a statement released by Fortify said the acquisi- Fortify has acquired the license tion includes "certain rights to CLASP, notes Jack. intellectual property, capital assets and skilled resources."

Both companies sell source code analysis tools, which find and fix security flaws early in the development life cycle, before a hacker could exploit them. Fortify plans to incorporate some aspects of Secure Software's CodeAssure into its own Source Code Analysis (SCA) tool, but it will not sell CodeAssure as a separate offering. "We will support CodeAssure in the short run and transition those customers to Fortify SCA," said Fortify CEO

John Jack, in a phone interview with SD



Times. "Both products approach source code analysis in a similar fashion." The Fortify offering is essentially a superset of CodeAssure, he said.

The acquisition isn't about products, said Voke analyst Theresa Lanowitz. It's about CLASP, Secure Software's methodology for addressing application security at each stage of the application life cycle. CLASP (which stands for Comprehensive, Lightweight Application Security Process) has some real weight behind it, she

said. Fortify's offerings align with the stages of CLASP, in much the same way that IBM Rational tools align with those of the Rational Unified Process, she said, referring to IBM's lightweight development methodology. "I see this [acquisition] as analogous.'

Fortify has acquired, among other assets, the license rights to CLASP, which Secure Software donated to the Open Web Application Security Project last year, noted Fortify's Jack. "We have acquired the brainpower behind it," he said. Fortify was expected to complete the sale by the end of January.

But how much of that brainpower will actually assume a role at Fortify isn't yet clear. Secure Software CEO Kevin Kernan is not staying on. "I will assist in the transition," he said. "And some number of employees will come across." But who, and how many has yet to be determined, said Jack. John Viega, CLASP's principal author, left Secure Software last year to join McAfee, noted

MORE CONSOLIDATION AHEAD?

SPI Dynamics' security evangelist Michael Sutton said consolidation is likely to take the form of companies that sell source code analysis tools teaming up with those that sell so-called black-box testing tools. "The two will converge."

Black-box tools test applications by attacking them, much the same way a hacker would.

A more interesting question to Voke's Lanowitz is: When will a big application life-cycle management player buy an application security company? "I expect one of them is going to make that kind of statement," she said, referring to Compuware, IBM, HP and Microsoft. Secure Software's Kernan didn't disagree. "They are keeping a close ear to the ground on this space. I think we will see that in late 2007, or early 2008." ■

Sun's WS-* Integrations A Collaborative Success

ing of these specifications, a process that has subsequently taken place in the OASIS standards body.

While Kassem does not take credit for spurring Microsoft to open its specifications, he does take credit for identifying the specs that were most important to interoperability. The first of these was WS-Addressing. "[WS-Addressing] was really the first case in the Web services community of a formal way of referencing end points," said Kassem.

Kassem went on to place bulls-eyes on a number of other WS-* specifications, targeting them for implementation on the Java side of the fence. These included WS-Policy, WS-Security, WS-Security-Policy, WS-Trust, WS-Reliable Messaging, WS-Coordination and WS-Atomic Transaction. These specifications, Kassem decided, would most directly require interactions with non-.NET systems.

Since Kassem's first trip to Redmond, Sun's Project Tango has grown to include all of these and a few more WS-* specifications. Kassem's team has built facilities for these protocols to interact with Java environments. So effective has Kassem's team been that Microsoft has even praised Sun for creating the best implementation of the WS-* specifications outside of its own. This from the company many consider to be Sun's arch nemesis.

CAN'T GET FOOLED AGAIN

Kassem said that his role in this highprofile project has been helped along by learning from prior Sun mistakes.

"We chose not to spin up JSRs around these," said Kassem. "We wanted to preserve the investment our customers had made in technology that already had traction, such as JAX-WS

and JAX-B. We didn't want to turn interoperability with Vista into a whole new set of APIs to learn. So, for example, folks who are customers who have invested in EJBs—we didn't want to have to introduce a whole new programming model so they could implement WS-Atomic Transaction and WS-Coordination.

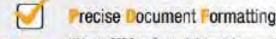
Another key to the success of Project Tango, said Kassem, was his insistence that tooling be available as soon as the interoperability code was released.

"Tooling typically lags," said Kassem. "We didn't want to repeat some of the things we'd done in the past. We wanted to make sure we had a good user experience on the tooling front, too. Within weeks of the Glassfish beta program, we were spinning up proof-of-concept activities," said Kassem.

Much of Project Tango's real-world experience has come from Glassfish, Sun's next-generation application server. Kassem said that the WSIT capabilities in Glassfish are now mostly complete, and that his team is primarily working on bug fixes. The team's NetBeans tooling, built specifically to deal with the WS-* specifications, has helped to speed the deployment of these interoperability capabilities, said Kassem.

So, despite the years of bad blood between Sun and Microsoft, it would appear that their collaboration has been a success. Kassem deems it a success as well. "We've had a very amicable and good relationship. We're pleased with the overall interaction models," said Kassem. "Engineer-to-engineer interactions are always healthy. It's been useful for us because we wanted to make sure we didn't have paper-level interoperability; we have real-world product-level interoperability." ■

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Telerik Embraces AJAX, Vista in UI Tools

Telerik announced the availability of its radControls Q4 2006 user interface components for ASP.NET and Windows Forms.

The WinForms edition allows developers to build applications soft's recently released Windows Vista, and the ability to run on Windows 2000 and XP as well as

It also offers an implementation of Office 2007's Ribbon tive architecture and the new Key Tips for keyboard navigation in the Ribbon. The radPanelbar control adds an Outlook-style element to the interface, allowing hierarchical navigation and use of a column display, while the Shape Designer lets designers use nontraditional shapes easily, without special coding.

Meanwhile, radControls for ASP.NET Q4 2006 adds an updated editor, an enhanced The new radChart includes advanced data-binding features, a chart wizard, and full Visual Studio 2005 design time support. The WYSIWYG radEditor 7.0 now offers inline spell-checking, and AJAX-based spell-checking in the integrated radSpell 3.0, with the aim of error-proofing code at its simplest level. The entire suite has been tweaked to support the release candidate of Microsoft's ASP.NET AJAX implementation, as well as the final version, and includes full C# and JavaScript source code. \blacksquare

CodeWeavers Crosses Over To Macintosh BY P. J. CONNOLLY

The Wine Project, now in its 14th year, began as an attempt to develop a translation layer that would allow POSIX systems to run Windows applications. The obvious advantage over virtualization lies in eliminating the additional maintenance and overhead of the guest operating system. CodeWeavers, the corporation most closely identified with the Wine Project, recently updated its product family, refreshing and renaming one member while adding another.

CrossOver Linux 6.0, formerly CrossOver Office, now offers improved support for popular games, including World of Warcraft. Many business applications also work on CrossOver Linux; the new release now allows the use of Microsoft's Project 2003 and Visio 2003.

CodeWeavers also released CrossOver Mac, for Apple's Intel-based systems, at the Macworld Conference and Expo in San Francisco. The Mac edition also supports a wide range of business applications, as well as popular games.

The company offers a Compatibility Center on its Web site, allowing interested users to verify the support for a given application; there were 2,587 applications listed in the database as of Jan. 11. If the desired application meets the highest standard of compatibility, it goes into the database with a so-called "gold medal"; there were 13 applications at this level, also as of Jan. 11. ■

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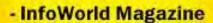


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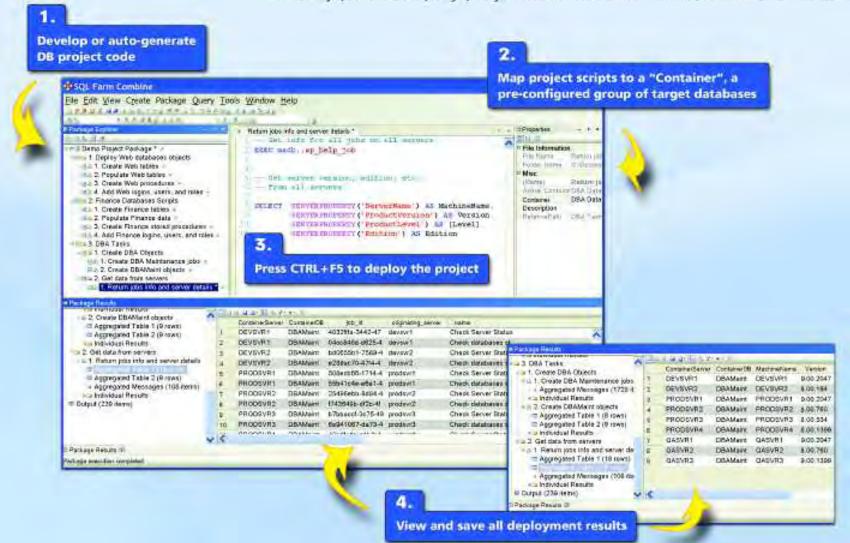
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AVIcode Ships Always-On Monitoring

Latest Intercept Studio geared to watch post-deployment behavior

BY JEFF FEINMAN

Testing doesn't stop when the software is shipped—or even when it's installed onto an enter-

prise server. Developers and testers have expectations for how the software should behave post-deployment, and according

to AVIcode, now there's a tool that can see if .NET server apps meet those expectations.

The latest version of Inter-

cept Studio, released last month, now offers both a perapplication and a system-level view of key performance indicators, sending that data back to both administrators and developers. The company calls this a "concurrent view" of both application failures and performance bottlenecks.

"Concurrent monitoring was really born out of a need to contractually support some of the systems that were being developed in a 24x7 manner and ensure uptime to avoid significant penalties. The basic premise around the product is that it's not always just performance monitoring, but how do you address when the application fails," said Chris Childers, product manager at AVIcode.

Intercept Studio 4.0, which is priced starting at US\$12,000 for a single monitoring console and one server agent, allows IT teams to view the health status of their system and their application from the application point of view. An on-the-fly configuration feature enables faster customization of data collection thresholds and triggers. Additionally, Intercept Studio 4.0 provides monitoring for applications running on the 64-bit .NET 2.0 architecture.

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VersionOne Agile Platform Updated

BY DAVID RUBINSTEIN

Customization, integration and simplified planning are the hall-marks of the 6.4 release of VersionOne's V1 management platform for agile development.

The new edition offers users the ability to define custom fields. As founder Robert Holler explained, "Agile tools normally won't classify fields the way a user does."

Also new is Windows integration authentication, with single sign-on against a Windows domain, and integration with automated testing tools, Holler said.

A new feature planner provides a single environment for viewing, entering and editing tasks, tests, estimates and priorities, Holler said, "so I don't have to go to three different places to see a feature and its associated assets." Templates automatically generate defaulted values, tasks and tests when a new feature is entered, he added. \blacksquare

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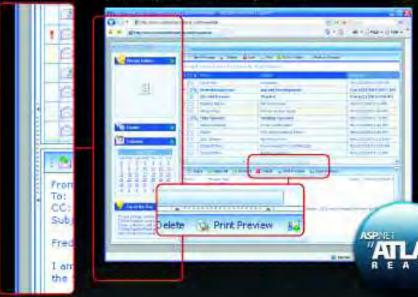
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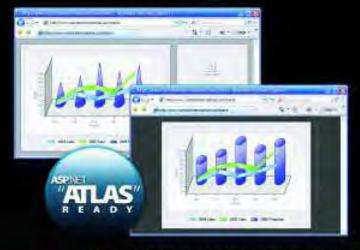
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Mobile Platform Devices Become Data Collectors

Microsoft unveils AURA research project aimed at sensor-based applications

BY P. J. CONNOLLY

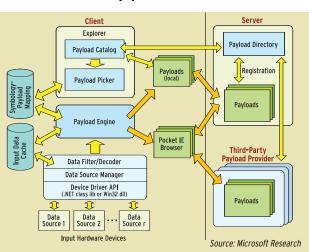
Mobile sensor-driven applications moved a step closer to reality in late December, when Microsoft announced the availability of socalled "research prototype" technology for the Windows Mobile platform. The AURA (Advanced User Research Annotation) System is a dispatch loop manager for mobile devices that can work sors to collect data.

Marc Smith, the senior research sociologist leading Microsoft Research's Community Technologies Group, explained, "The mobile device is more than a phone...it can be seen as an object-triggered information retrieval system. As machines come to be able to sense the world around us, they can react to, and provide, information associated with that world."

Accelerometers, Bluetooth beacons, cell towers, GPS devices and RFID tags are all examples of sensors that can provide data to a mobile device for consumption by a central application. The AURA project's goal is to give developers an application framework that can forward the collected data and metadata to a central server, for monitoring or archival purposes.

The project's prototype is a Web application that allows users to scan product bar codes on a Windows Mobile Phone, which then contacts the Web services that identify the product. The Web service collects the available metadata and launches a browser window on the device that provides the user with more information about the product. They can then provide their own feedback on the item through the AURA community Web site, or view the comments of others.

Smith observed that the bar codes on the media and grocery items in the AURA prototype's database provided a way to link to more information on the individual products, via the Internet. The point of the prototype, he explained, was "bridging the gap between the physical object and its digital 'aura,' if you will, the cloud of information relevant [to] and associated with that object bridging the vast stores of information



with a variety of sen- The AURA client uses Web services to manage metadata 'payloads' while providing a simple interface for sensors.

on the back end with the mobile device on the front end, and triggering it based on, 'Hey, look at what I'm looking at, Computer!"

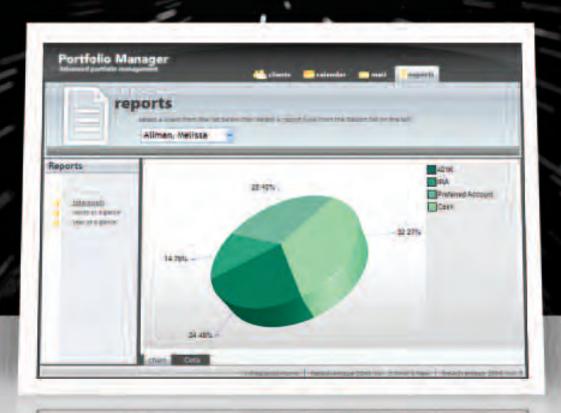
According to Smith, one of the unforeseen technical hurdles that came up when adapting cell phone cameras as bar code readers was optical: "One of the things we had to do was to set the cameras to a lower resolution than they are capable of." Focal depth was also a problem, since with most cell phone cameras, "if you're close enough to see it, you're close enough to blur it," he

But the vision of AURA extends far beyond shopping, or even supply-chain management. Oil exploration is one example Smith cited of an industry that had particularly acute requirements for interactive mobile data collection. "The architecture of the client is such that any number of additional sensors, and the events they fire, could be used," he noted. "Part of what we're demonstrating is that this is now moving down to consumer-grade hardware."

Smith is especially proud of the ease with which one can redirect the AURA client to a new set of resources: "It requires a text editor and a couple of lines of XML.'

Although the project is officially a beta, Smith noted, "the pieces actually fit together, and they work. The question now is, what are the compelling scenarios? We would like to see enterprise developers start chewing on this and see if they can find other applications for it." The AURA client is available at the project Web site, at aura.research.microsoft.com/Aura; registration is required to use the prototype application.

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Veracode Offers On-Demand Binary Scan

the RSA Conference in early February. Veracode CEO Matt Moynahan said, "To get complete coverage of any application or any software, you have to look at the 1's and 0's as opposed to source code."

Veracode, said Moynahan, is an on-demand service. Clients pay per megabyte to upload their binaries to the Veracode Web site, where automated security analysis is performed. Moynahan said that his company will offer a service-level agreement for completing all scans within one to three days of the upload being completed.

Binaries uploaded to the Veracode service will be subjected to scans for buffer overflows, code injection points and lack of encryption in crucial spots, said Moynahan. The service will also scan binaries for known rootkits and Trojan horse code, and as the service expands, Moynahan claimed it will be able to find obfuscated backdoors that have perhaps been injected by malicious internal coders.

"What's unique to me was the notion that doing code analysis at the binary level reduces the concerns around IP," said Moynahan. Without relying on possession of the original source code being used by a team, Veracode offers developers a way to run securi-



code that is used in conjunction with first-party projects.

But despite Moynahan's claims of IP cleanliness, the Veracode system remains to be tested against even the most

license agreements, most of which forbid the redistribution of binaries. Uploading a binary to an outside Web site could be seen as redistribution under some EULAs.

consulting services to help developers fix the holes discovered by its automated service. The initial version of Veracode will offer scans of C and C++ code, and Moynahan

promised that Java analysis would also be available by the time of launch in February. Future additions to the platform should include the ability to scan PHP and C# applications. ■

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Java SE 6 Seen as Improvemen

◄ continued from page 1

snapshot and run it through its paces. The binaries that were released also helped a lot. Even Apple managed to squeeze out a few preview releases, something unheard of for a nonfinal version of Java previously."

As he became more familiar with Java SE 6, Suleiman said that he fell in love with the incremental updates. "The best changes are perhaps in the details, rather than the big shiny stuff. Performance fixes are always a welcome enhancement, for example. One of my favorite new features is the improved debugging support, where you command line flags to enable running under Java SE 6. debugging," said Suleiman.



can attach to a Java process with- Pirates and copyright flouters will find that their favorite tool, out having to specify different Limewire, looks more like other Windows applications when

'GRAY BOXES' GONE

Barry Burd, professor of mathematics and computer science at Drew University, also has been following the Java SE 6 development process. He pointed out the newly refocused Swing implementation as a primary reason for upgrading to the new Java.

"In terms of GUI rendering, it's so much better," said Burd. "Until now, Swing applications didn't look like applications; they looked like gray boxes. The gray box problem made them so inconvenient to use, you just wanted to throw the whole thing out the window and go write native applications. Now they look just as good as native programs."

Another developer who has toyed with Java SE 6 is Sam Berlin, a senior developer at Limewire. His company produces the infamous peer-to-peer networking platform of the same name, which runs on the Gnutella network. While Limewire is typically used to illegally trade movies, music and software online, it's also a massively complex Java desktop application. As such, Berlin finds the new Swing support to be of real importance.

The thing that really got me was the anti-aliasing of text. When you run Limewire and you have other native Windows applications running alongside older versions of Java, the native apps look really pretty if you have a flat panel monitor, but the Java application didn't," said Berlin.

BENEFIT OR BLOAT?

Burd's favorite addition to the platform, meanwhile, is one that many developers have questioned: the inclusion of the Derby Java database. "Many people in the real world think that [Java SE 6] is bloated—that the download is too large. They're complaining about the fact that everything that's been deprecated hasn't actually been taken out, except for the MIDI support," said Burd.

But, as an educator, I find it fantastic that this is in there," added Burd. "This means there's a standard database in there that I can use with ease in my about the 5,000 other features available in different databases. Anybody in the corporate world will say, 'There's diversity out there; we don't want to use this generic least common denominator.' But for my money, in explaining Java and how databases work, I find it incredibly useful to have a standardized database that does what I need it to do, and that I can talk about it in Java terms."

Burd also pointed to the inclusion of scripting support, compiler access and pluggable annotations as beneficial steps toward making Java an environment that can handle both type-safe and dynamically typed development.

But there are some sore spots in Java SE 6. Suleiman pointed out that he was still unsure of the Web services additions to the platform. "It feels too much like trying to play catch-up with Microsoft, and attempting to make Web services more 'native' by sucking [them] into the core platform. I'm not convinced this is so vital. It also makes adding in third-party implementations trickier," said Suleiman.

Burd, too, has his reservations about the new release but felt that it was a general improvement overall. "This is not as sexy a release as Java SE 5. There aren't any new language features. There tends to be this nice robustness buildup from one release to another. This feels very sturdy, and since it was a more conservative update than Java 5, it probably is more sturdy, though it's still too early to say," said Burd.

Berlin agreed. "They had gotten the base work of making it better for developers done. Now they're just making it better for people." ■

database work. I don't have to worry

TeamCity Enters Visual Studio

Version 1.2 adds Visual SourceSafe support

BY ALEX HANDY

JetBrains, the flying craniums responsible for the IntelliJ IDEA integrated development environment, has updated its team and build management software. TeamCity 1.2 adds Visual Studio integrations for both versions 2005 and 6.0 of Microsoft's IDE. These additions bring TeamCity into the .NET world for the first time.

Sergey Dmitriev is JetBrains' CEO, and he said that TeamCity 1.2 allows .NET developers to use the product for the first time. This comes through the addition of Visual Studio plug-ins and support for Visual SourceSafe, Microsoft's code repository.

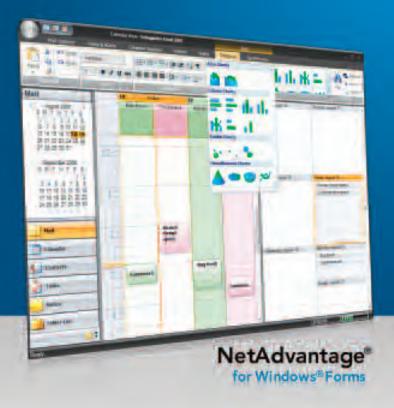
"TeamCity is intended as a cross-platform tool to support development teams working on both Java and .NET frameworks," Dmitriev said. "The cross-platform objective was a real challenge for our engineers. The initial set of productivity features focused on supporting Java-based projects—that is why delivering new features for .NET teams makes us feel that we are approaching the desired balance."

TeamCity now supports both Java and .NET development and build management. At its heart, the software allows development managers to coordinate nightly builds and tests, and to raise coding standards. The software will also attempt to lock out developers whose code does not pass initial tests, thus forcing coders to adhere to standards under penalty of lockout.

The new version of TeamCity also includes multiple bug fixes and cleanups left over from previous releases. Also added is the ability to run open stack traces inside Visual Studio.

The update to version 1.2 of TeamCity is free to those who've already purchased the product, or received it in bundles with other JetBrains software. Otherwise, the platform costs US\$199 per user. ■





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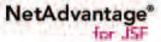


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Modeling Is Key to

Behavioral and structural views make for

BY P. J. CONNOLLY

Modeling an application is more than just creating a flow chart. Model Driven Architecture (MDA) is a scheme in which fundamental concepts are abstracted away from incidental methods, for easier understanding and, hopefully, process improvement. As Telelogic chief evangelist Bruce Powel Douglass noted, "The key principle behind MDA is the separation of the essential characteristics from the things that change."

Douglass, a former co-chair of Object Management Group's Real-Time Analysis and Design Working Group and the author of several books on developing real-time systems using modeling techniques, has recently been espousing the benefits of C programming in a graphical way. Telelogic in early January released Modeler, a free, entry-level modeling environment that can be used to create embedded systems.

Douglass explained that "[models] improve your ability to visualize characteristics of your system. In 5 million lines of source code, where are your threads? Who creates them, who destroys them, where do they run, when do they run? What are the resources the threads share and how are they managed?"

The advantage, as Douglass put it, is that "I can visualize things better; I can more easily see what's going on." This doesn't always make the customer happy, he conceded. "A lot of people have found that once they can see the architecture of the system, they say, 'What was I thinking?'" Communication, consistency and provability are the obvious byproducts of a model-driven development culture, according to Douglass.

He likened the development of an application to the construction of a



Everyone has a limit to the amount of source code they can sight-read, says Douglass.

building, arguing, "I don't have one picture with every detail of that building on it. I have blueprints that emphasize structural members; I have blueprints that emphasize water conduits, electrical management, heating management, different views that support different questions." Class diagrams, sequence diagrams and state machines can be seen as analogous to the electrical, HVAC and plumbing diagrams of a physical structure.

"What we've done in [our] graphical C environment," Douglass noted, "is we've identified eight functional, or operational, views. First is the use case diagram—that's a way of representing requirements...and clustering requirements into usable, coherent units.

"Then," he continued, "there's a set of [four] structural views. A build diagram basically shows the things you're going to construct. For example, you'll

Xilinx Accelerates FPGA Design

BY P. J. CONNOLLY

Xilinx updated its Integrated Software Environment (ISE) last month by including new compiler features that the company claims can cut runtimes to one-sixth of what they previously were. ISE 9.1i also addresses the requirements of power-sensitive applications, reducing dynamic power consumption by an average of 10 percent, according to Xilinx.

The new SmartCompile technology allows field-programmable gate array (FPGA) designers to partition the design, and uses cut-and-paste features to preserve the placement and routing of unchanged portions of the design. That, the company says, reduces the time it takes to implement the design changes.

Likewise, the compiler's SmartGuide reduces reimplementation time significantly by using prior implementation results where appropriate.

Also new to the ISE compiler is the SmartPreview feature, which allows developers to evaluate their designs as a series of stages. By allowing users to pause and resume the process of placing and routing to collect results, Smart-Preview lets its users make important trade-off decisions based on intermediate results of routing and timing.

An expanded timing closure environment allows designers to cross-probe between constraint entry, timing analysis, floor-planning and report views, for more effective analysis of timing problems. The timing closure in ISE 9.1i

Software Success

better code, claims evangelist Douglass

have a database, you'll have some DLLs, an executable, and you want to represent the set of these built things that you're going to wire together in the actual application, which might be distributed across processors, or threads, maybe all running in one thread.

"A call graph shows how I'm going to have these things called functions and provides a sequence in which it can call other functions, as well as things that get passed as variables, as parameters, amongst those things. [It] represents a sequenced set of function calls for your system," Douglass explained.

"Another one is the file diagram," he said, which represents .c and .h files, and their features, including "the functions, the types and the variables they contain. Well, I can represent those with boxes showing one compartment for the variables, one compartment for the functions and one for the types. I can show how they relate to other [files], in terms of 'Do they have a header-include, or is it a source-include?' I can show whatever the level of detail I need on a file diagram.

"The last of the structural views," Douglass continued, "is, of course, source code. It's always available to me, and if I need to look at it, I can go there."

Douglass went on to outline three

behavioral views of software. "Message diagrams basically show messages among these file elements, as they invoke services and pass data. These invocations can either be synchronous, as in just a regular call, or they can be asynchronous, in terms of I'm sending an event, which is queued and processed. So, I can represent both those kinds of 'thread rendezvous,' if

He continued, "A state diagram, I can take for a file as a combination of functions, types and variables. What a state diagram does is, it says in what order can those services be invoked. [For example,] I might not want to take an aircraft on an approach vector unless my landing gear is down. I can enforce certain preconditions in a state machine."

Last, Douglass said, "we have flow charts, which represent algorithms. In UML, we have something similar, called an 'activity diagram,' which is like a flow chart on steroids."

Although some code jockeys will always scoff at the use of modeling, he observed, everyone has a limit to the amount of source code that they can sightread. "No matter how smart you are, there's a system too complicated for you to grasp," he noted. ■

Green Hills FAT-tens Up Its RTOS

BY P. J. CONNOLLY

Green Hills Software released an update to its micro-velOSity royalty-free realtime operating system last month, with new features designed to eke out optimum performance while minimizing the system footprint. micro-velOSity 2.2 also adds support for MIPS32 processors, aiming at the system-on-a-chip market.

offers improved timing correlation between synthesis and placement, combined with enhanced physical synthesis, for more accurate results.

The new ISE takes advantage of Xilinx's latest 65nm Virtex-5 platform and the associated diagonally symmetric ExpressFabric design to provide what the company claims is a 30 percent improvement in performance when compared with competitors' products.

The increasing numbers of FPGA designers that have adopted source code control will appreciate the way that ISE 9.1i identifies the files needed to recreate the results for a particular series of tests. A Tcl console allows developers to easily move between the ISE graphical interface and the command line. All versions of ISE 9.1i run on Red Hat Enterprise Linux 3 and 4, and Microsoft Windows 2000 and XP Professional.

The new version of Green Hills' RTOS includes a FAT-compatible file system, micro-File, that can be used with a variety of programming interfaces and media. C standard I/O and C++ I/O streams are supported along with POSIX. The flash device manager features wearleveling technology that reduces the effect of repeated erasures and writes on flash memory, which will degrade after a number of write/erase cycles.

A USB device management system is also part of the micro-velOSity update; micro-USB includes an API and a framework for managing USB 1.1 and 2.0 devices. It allows the use of a wide variety of device types, including USB memory sticks.

Another new feature of microvelOSity 2.2 is GHNet, a TCP/IP networking suite that was designed from the ground up to provide comprehensive RFC and standards-based support for a wide range of core management and transport protocols.

By adding MIPS to the list of supported processors, the company can now claim to support all major 32-bit processors used in embedded devices. The company already supported the ARM, Blackfin, ColdFire and Power Architecture families. ■

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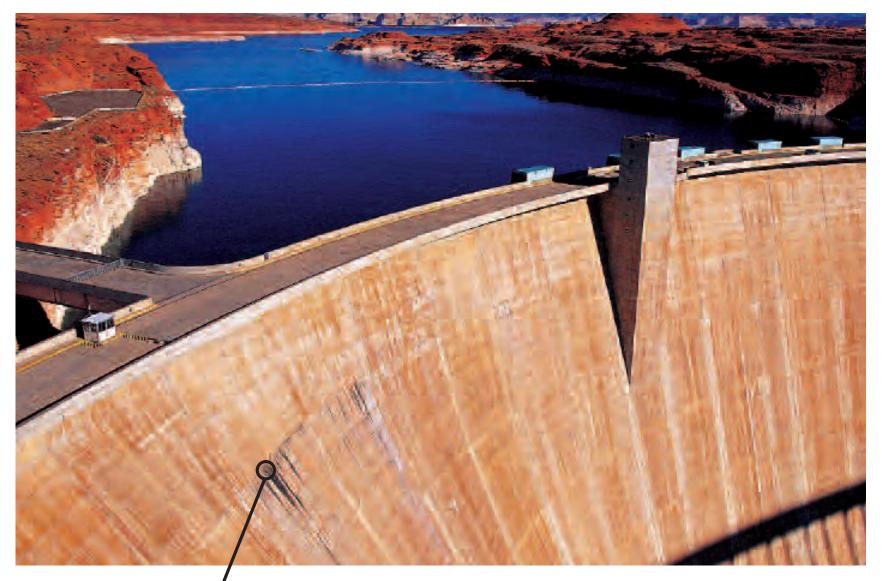
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BY JENNIFER DEJONG

hey used to talk about buffer overflows, cross-site scripting errors and SQL injections. But today talk from application security tool makers is all about AJAX and Web 2.0.

If the shifting conversation is any indication, the old threats—essentially techniques hackers use to attack applications—are a thing of the past, replaced by new types of attacks, unique to AJAX (Asynchronous JavaScript and XML) and Web 2.0.

But nothing could be further from the truth, according to application security tool makers. The old threats are alive and well, and the newer technologies have not given rise to fundamentally new types of attacks. But three key factors are changing the application security landscape, steering the conversation in a new, bigger-picture direction.

First, like other tool makers, those

that sell application security offerings are eager to reposition their tools around the current hot technologies, leading to "a lot of chatter around AJAX and Web 2.0," said Ed Adams, president and CEO of software security consultancy Security Innovation. "They are the latest and greatest technologies."

Second, the application security market, relatively unknown only a few years ago, is moving out of its earliest phase. And rather than focus on highly technical details pertaining to SQL injections and cross-site scripting errors, for example, tool makers are emphasizing the root cause of these flaws: the need to validate input to Web applications.

"We need to stop chasing the vulnerabilities one by one," said Danny Allan, strategic research analyst for Watchfire, which sells application security tools, among other offerings.

Theresa Lanowitz, who heads research firm Voke, agreed. But she also

pointed out that app security tool makers are emphasizing the big picture in order to better position their offerings to business decision makers. "The CIO does not want to [listen to you] talk about buffer overflows. If you do, he'll send you to development."

The third, and most important, reason the app security conversation is changing is that AJAX and Web 2.0 have in fact made Web applications more vulnerable, most of the tool makers agreed. By definition, both technologies are highly responsive to the user, and that has created a "bigger attack surface," said Bryan Sullivan, a development manager for application security tool maker SPI Dynamics. In the past, when applications accepted input through a single form, "there was one door to secure. But with AJAX and Web 2.0, there are many, many more [entry points]." And each represents an opening a hacker could exploit, he said.

"Think about a bank, versus a shopping mall. There's one door for the bank, but hundreds of doors for the shopping mall. And they all have to be guarded."

NEW, LESS SECURE LANDSCAPE

The emergence of more openings to exploit has indeed increased concern about Web application security, said Brian Chess, chief scientist and founder of Fortify Software, which sells application security tools. "But while the newer technologies change the security landscape, they don't change any of the fundamentals of making applications more secure," he said. "AJAX and Web 2.0 are simply magnifying the complexity of applications."

With AJAX, there are just more aspects of a Web application that can be compromised, said Billy Hoffman, a lead researcher at SPI Dynamics, and coauthor with Sullivan of "AJAX Security,"

continued on page 36 ▶

New Web 2.0 Technologies Creating Gaps

a book expected from Addison-Wesley this summer. "If you analyze only the server code, you have ignored half of the app," he said. "You have to [test] the client, where Java-

work, and you have to analyze how those two pieces interact."

A key issue to take into account is how the app handles authentication, said Chris Wysopal, co-founder and CTO of Veracode, an application security startup expected to open its doors for business this month. "Applications are typically validated for input on the client side. If everything is OK, the input is sent to the server. But apps aren't validated again on the server."

That approach doesn't make sense with AJAX. It could lead to an exploit where a hacker gets the client to make a call to the server that says, "Clone this Java object," said Wysopal,

offering an example. "All those Java objects could bring the server down."

What complicates matters with AJAX is that so much is going on behind the scenes, making it easy to overlook potential openings.

"AJAX apps are devilishly difficult to QA," said SPI Dynamics' Hoffman, referring to the quality assurance testing process. "Say you have a map of the 50 states, where holding the mouse over each state lets you see data," he said, offering an example. "If you look under the covers, you will see each state represents a request. You have to test every single one. If I send XX to California, will it break?" The possibilities for attack are infinite, he added.

The "under the covers" aspect of AJAX apps has led some to dispute the notion that AJAX apps have an inherently bigger attack surface. "Requests are happening, and you may not know it," said Ryan Berg, chief scientist and cofounder of app security tool maker Ounce Labs. But that doesn't mean AJAX apps have an inherently larger attack surface, he said. "We try to demystify AJAX, but it's regular JavaScript."

Jeremiah Grossman, CTO for WhiteHat Security, a Web application security services provider, agreed. "I don't think AJAX changes the security landscape at all," he said. "It's a client-side set of technologies and a cool, new buzzword. It doesn't change how vulnerable a Web site might be."

THREATS BEYOND AJAX

In some respects, the security threats AJAX presents are similar to those around service-oriented architectures, noted Fortify's Chess. "Both reflect the growing complexity of software we are working with. With SOA, instead of client and server talking to each other, you have Web services talking to each other. A SOA-based bank application might include, for example, one Web service for accessing a checking account, another for managing a credit card account and another for authorizing access to the application, he said. "With a traditional application, the sequence was a given [that] you had to log

continued on page 37 ▶



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Web 2.0, AJAX Leave Security Gaps

in and go through the authorization process before you could access your bank balance." But with SOA, those events can occur out of

sequence, and that brings with

it new security concerns, he

Newer still are the security concerns ushered in by Web 2.0, a concept that views the World Wide Web as not just a collection of sites, but also as a platform with which users interact. "Users are contributing to the Web's collective intelligence, and that creates a new attack vector," said Mike Weider, founder and CTO of Watchfire. "How do I make

not malicious?" That is a new challenge: Web sites must test their own apps, and also make sure user contributions are secure, he said. "There aren't any automated tools to do that.

The company creating the Web site is left to filter the content."

Another potential opening brought about by Web 2.0 is socalled mashups, Web applications that automatically comcontinued on page 38 ▶

WHAT WILL IT TAKE FOR APP **SECURITY TO TAKE OFF?**

From credit card privacy pitfalls to news reports about Social Security leaks, evidence of unsecured applications abounds.

But despite the steady stream of news-and the growing number of companies peddling offerings for building software that can withstand attack—the market for application security is yet to take off dramatically.

An estimated 85 percent of IT organizations are still in "tire-kicking mode" when it comes to buying application security tools, said Voke analyst Theresa Lanowitz.

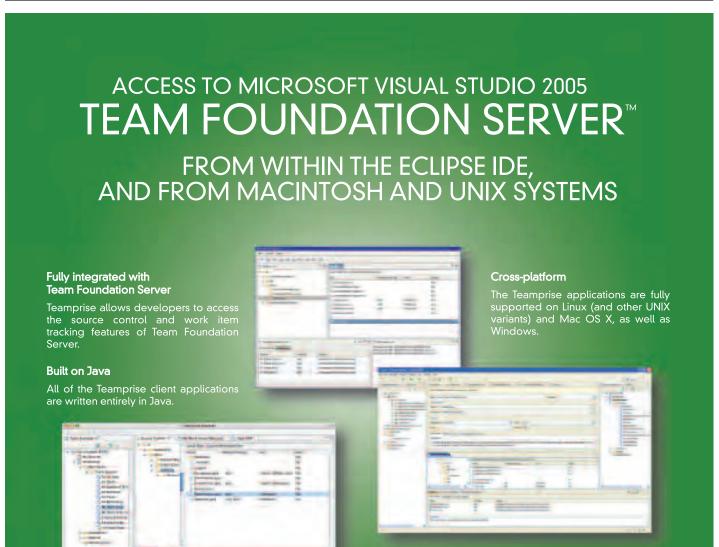
Things are pretty quiet on the acquisition front. Watchfire bought Sanctum in 2004, and Fortify Software last month announced a plan to acquire Secure Software, but "we haven't seen Mercury, Compuware, IBM Rational or Microsoft make a bold play," she said.

Lanowitz does not expect that the application security market will take off until one of the top application lifecycle management (ALM) tool makers buys an application security company.

Three things are holding the big ALM players back, she said. First, their customers aren't demanding application security tools. Second, the acquisition price of companies that make such tools is still high. Third, application security software remains a pretty technical play, and as of vet it hasn't hit the radar screen of the CIO and line-ofbusiness managers, she said.

Beyond a big ALM player taking the lead, only one thing could get that market off the ground. Lanowitz said. "A catastrophe so big the business pays attention."

—Jennifer deJong





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Gaps in Security

bine content from more than one source, by making publicly available information about how to access them. "They offer a blueprint of how to interact with them," said SPI Dynamics' Sullivan. "But a hacker will say, 'OK, this is the proper way to do things. I will do the opposite," he said. "When you tell people how to talk directly to your back-end systems, you are telling them how to attack you."

A MORE SOPHISTICATED STORY

As developers, testers and application security tool makers work to plug holes

opened by AJAX and other Web 2.0 technologies, one thing is clear: Tool makers aren't likely to resort to talking about SQL injections and cross-site scripting errors.

It's a good thing the conversation has moved away from individual attacks, said Fortify's Chess. "More people are thinking about the fact that these attacks are not isolated [incidents]. And that leads people to plan-not just react," he said. "We need to educate programmers, verify that mistakes were found, and think a little more holistically." ■

MASHUPS: THE NEXT BREACH?

As a cool, Web 2.0 technology, mashups are getting a lot of ink. But not so much has been said about the application security concerns that may come with them.

It's not that mashups—applications created by merging information from multiple online sources—are inherently insecure. The problem is that they bring together from disparate sources components that fall outside of the mashup developer's control. Mashups offer a quick way to build powerful applications without having to write them from scratch, said Chris Wysopal, co-founder and CTO of application security startup Veracode. "But you are building applications with components you can't manage. You can't do security on them."

That issue must be addressed if mashups are to make their way in the enterprise application arena. "The industry needs to come up with a means to show that components used in mashups are secure," he said. "We are moving away from a world where I could test the entire app, even if I bought code from outside sources," he said. "With mashups, that is going away." —Jennifer deJong





Hackistan leader shakes confidence of I.T. world.

Conventional firewalls unable to withstand expected onslaught.

he conclusions of the Hackistan Study Group (HSG) offer an alarming assessment of the hacking threats posed by this rogue nation.

Hackistan has toyed with security professionals ever since a state-sponsored team of digital terrorists hacked into the FAA database and put Harry Truman on a no-fly list. But the situation is worsening, as the report cites "an alarming investment in Hackistan's elite Bot Army." It noted that "the growing sophistication of their logic bombs, Trojans and SQL injection techniques is gravely disturbing."

Many are banking on California-based Fortify Software, a leader in software security, to neutralize these threats. Commenting on Fortify's groundbreaking approach, the report said that "protecting applications at the code level is increasingly being viewed as the only viable path to creating confidence in a very dangerous world."

Contacted at Fortify's global headquarters,

John M. Jack, the company's CEO, was undaunted by Hackistan's bluster, commenting that "true, for the rest of the security industry they are a devastating threat. For us, they're amateurs who couldn't break into my daughter's Kevin Federline lunch box." He added



Lifetime Despot Zorkul of Hackistan

"We are able to identify and fix vulnerabilities throughout the entire development process. We anticipate that frustrated hackers, hungry and broke, will have to move back in with their parents in record numbers."

No Hackistan official was available for comment, but a blog post that is believed to come from a senior Hackistan official (or even Lifetime Despot Zorkul himself) mocked the security efforts of government and industry, saying that "the chances of the world getting serious about code security are about as likely as John Jack waking up with a full head of hair."

"The study group warned against pro-Hackistan propaganda that appears on web sites like www.discoverhackistan.com."

CEO Jack fired back: "I have ultimate confidence that our products Fortify SCA, Fortify Tracer and Fortify Defender will block Hackistan's nefarious plans. Zorkul's desperation is also apparent; he has chosen to attack me on the follicle level because they are powerless to reach us on the code level."

Leading the fight against Hackistan is an innovative high-tech company called Fortify Software. The company said it will not rest until Hackistan is turned into a Club Med vacation spot.





FROM THE EDITORS

Java SE 6: Best Java Yet

Cun has released version 6 of the Java Platform, Standard Edition, and the word on the street is that this is the best Java implementation yet. And it should be. After all, this is the first version of Java that can produce attractive desktop applications, with all those incumbent animations, shadings and transparencies that make modern operating systems so sexy. While Sun loves to cite a 15 percent-to-20 percent speed increase in the JVM itself, the company isn't so vocal about its newfound love of native GUIs. Rather, Sun has calmly stated over the past year that Java SE 6 would produce the most beautiful integrated applications yet.

It would certainly seem that Sun has delivered on its promise. So well, in fact, that Java SE 6 applications can barely be distinguished from their native counterparts.

But there are other improvements in Java SE 6 that herald a bright future for the platform. The first of these is the important decision to throw MIDI support overboard. While insignificant in the grand IDK, MIDI support was a long-deemed useless aspect of the Java environment, and the ICP's decision to remove it is one that sets an excellent precedent: Given enough time and lack of interest, even an environment that holds compatibility as its goal and mantra can find ways to remove unused code.

Finally, the inclusion of the Derby Java database is a fantastic move. While no one will be erasing MySQL or Oracle installations in favor of Derby, it's a brilliant proving ground for developers who want a simple place to build database-driven experiments. If there is one area of development that is a consistent source of struggle and confusion, it's the database world. With dozens of database-specific APIs to choose from, it's convenient for developers and users alike to have a readily available data store that requires nothing more than Java's built-in faculties.

App Security: Thinking Bigger

With every step forward in software development, comes another hole that you can fall into. Rich Internet applications, such as those using AJAX or other "Web 2.0" techniques, offer to users undeniable benefits as well as an attractive platform for the future. The loosely coupled and distributed architecture in this new model magnifies the complexity of applications tremendously, and provides new weak spots that miscreants can exploit with malicious software and overt attacks. It is important for development and test teams to receive the time, training and tools to address the security issues inherent in these new types of

However, it is also important not to overreact. According to experts, it's not an entirely new playing field. Specifically, existing threats—the types that your development and testing teams are already working to eliminate—are not going away. The biggest hazards remain bread-andbutter topics, like input validation. Security gurus love to get specific about particular exploits, such as buffer overflows, SQL injection or cross-site scripting. The nature of some of those exploits changes when dealing with AJAX or Web 2.0. But the big picture remains the same: authentication, authorization, validation.

What's the cure? Ultimately, software architects, developers and tool makers will have to address the root causes of software security failures. The attack patterns will constantly change, not only with new integration technologies like Web 2.0 or service-oriented architectures, but also with changes in operating systems and application stacks. It's increasingly impossible to keep up with all the variations of each possible exploit on each platform combination.

Only by thinking big, and addressing the root causes of application insecurity, will organizations take charge of application security.

LETTERS TO THE EDITOR

Remember CUA??

I applaud Alan Zeichick's comments on CUA compliance ["Zeichick's Take: Remember CUA Compliance? Microsoft Doesn't," News on Thursday, Jan. 4]. I've been a software engineer for over 14 years and love my GUIs and IDEs (and the command-line too), but it's essential to be able to use the keyboard shortcuts instead of the mouse so I don't have to keep moving my hand away from the keyboard.

If someone doesn't follow CUA rules, I have to learn new keystrokes to get to standard functions that are common to all applications (like "open," "save," etc).

Regarding the Ribbon and Microsoft's claim that users couldn't find the more obscure features of Office productsdoesn't the word "obscure" tell them something?? The problem isn't that there are too many features, it's that they're now all visible in a huge confusing smorgasbord with the least-used right next to the most commonly used. I think if they would instead enforce CUA-compliant standard menus in combination with moving nonstandard (app-specific) functions to a customizable ribbon, that would go a long way in helping both novice and seasoned users get the most from the applications.

Clayton J. Jones

Senior Software Engineer SafeNet Inc.

BOOK IT

I enjoyed Andrew Binstock's column on the various books available on Java programming ["Learning Java: What a Choice!" Jan. 1, page 44].

For a different, more modern take on how to learn Java, please take a look at "Agile Java: Crafting Code With Test-Driven Development." With this book, I purport to teach relatively new programmers how to program in Java using TDD.

Jeff Langr

KEEP STUFF SAFE

Your article on preserving scholarly journals was very interesting ["Portico Takes on 100-Year Archive Dilemma," Dec. 15, page 1]. We hope you might consider a very different perspective on this area the LOCKSS (Lots of Copies Keep Stuff Safe) Program (www.lockss.org).

Libraries, with publisher cooperation, are building and preserving digital collections—for themselves! Using the LOCKSS system, libraries are able to work together to continue their role as memory organizations in service to all the readers in their communities, rather than outsourcing [the job].

They don't require large-scale centralized infrastructure; they don't require arcane expertise. That's last century's approach to information technology! Robust, distributed, fault-tolerant, peer-to-peer are the systems engineering approaches of the 21st century.

The LOCKSS technology has won

awards for computer science research, and is used by projects in the Library of Congress' NDIIPP program.

In addition, almost every major commercial publisher in the world is cooperating to use the LOCKSS software in an initiative called CLOCKSS (Controlled Lots of Copies Keep Stuff Safe). CLOCKSS is community-governed, and after a major disaster, the content will be available to everyone—not just those who are paying a third-party service. After all—there's been a disaster!!

Victoria Reich

Director, LOCKSS Program Stanford University Libraries

DON'T KILL THE MANAGER

Ryan Martens' Guest View, "Kill Your Inventory Manager" [Dec. 1, page 42], makes some good points for why an agile process is beneficial, but doesn't make a very convincing case for why eliminating your "inventory manager" is relevant to succeeding with an agile process.

The author suggests that developers can become a slave to the inventory, but never mentions the idea of a product manager, whose job it is to refine the inventory. Martens says, "Hidden in those [inventory] systems are very bad defects tied to technical debt, important requirements and lots of partially completed items that are development complete, but not 'done' enough to release or test.' This seems to be an argument against poorly conceived "sub-assemblies" (to continue the metaphor), rather than against inventory tracking.

I'm just not getting how the inventory management system itself is imposing a hindrance on the team...unless the author assumes that in any practical inventory system, the inventory items will devolve into a chaotic mix of well-planned new functionality and poorly conceived cruft buried under countless maintenance tasks, and thus the only way to rise above the chaos is to set up a parallel system. The assumption is that Post-it notes are easier to set up than a parallel tracking tool. But the software solution exists for a reason: It provides capabilities essential to closing the loop with QA and generally tracking the state of the product.

I agree with the claimed benefits of an agile process. I just don't see how the existence or lack of existence of an inventory manager is key to the success of an agile process. In fact with one agile process, Scrum, inventory (backlog) is an essential component. You could pick any arbitrary aspect of a software development process that is being poorly managed and make similar claims.

Tom Metro

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Tooling Up With CodeGear

Zeichick's Take

odeGear, the tools company spun off →from Borland Software, has got some people with great ideas. I hope they're able to pull them off.

Recently, I drove across California Highway 17, a beautiful but trafficinfested road, over to Scotts Valley and "The House That Philippe Built," the giant campus created by legendary

Borland leader Philippe Kahn. CodeGear occupies one of the building's six wings—a far cry from the days when Borland filled the space to overflowing. Today, all the Borland folk have left Scotts Valley; it's CodeGear country now.

My hosts were two longtime tools gurus: David Intersimone (better known as

David I, the voice of the Delphi community) and Michael Swindell, the new vice president of products. We had a wonderful time reminiscing about the good old days, the bad old days, and what lies ahead for CodeGear, which has been set up as a wholly owned subsidiary of Borland.

One thing they both emphasized is that CodeGear is operating as an autonomous unit: As long as the spinoff hits its financial goals, it can do just about whatever it likes without running back to Tod Nielsen, Borland's CEO, for approval. That includes bringing back the old "Turbo" brand, for example, for low-priced (and free) tools intended for consultants, enthusiasts and students. It also includes working with companies other than Borland on technology development, joint marketing and integration.

We discussed, for example, the likelihood of partnerships between CodeGear and Borland competitors in the application life-cycle management market, such as HP's Mercury division, or Serena or even IBM Rational. According to Intersimone and Swindell, that's entirely possible within CodeGear's charter. Howev-

er, that assumes that HP Mercury, Serena and IBM Rational would see a benefit from playing with CodeGear. Time will tell if that comes to pass.

CodeGear's mission is very different from that of Borland. Borland's goal is to sell high-end application life-cycle management software to corporate bigwigs: big sales of hundreds of seats costing many thousands of dollars. That places it in competition with the likes of Serena, IBM Rational and even Microsoft's Team System. The Borland

message is about making the enterprise more competitive, reducing the costs and risks of software development and so on. The character of specific developer-facing tools doesn't factor into it. As Swindell put it, "The CIO doesn't care about IDEs."

However, developers care about IDEs, and so do development department managers. They're the people CodeGear wants to talk to. To its enterprise customers, CodeGear's message will be about enhancing the productivity of individual developers and development teams. CodeGear will try to show that tools, such as IBuilder, Delphi and Interbase, will help programmers write better code more quickly, and collaborate more effectively.

The enthusiasm and, well, freshness in CodeGear is palpable; it reminds me of the Borland of old (before Del Yocam took the reins back in 1996). Intersimone and Swindell were talking about developing new tools, such as for dynamic languages and for Web-based collaboration, and have a real vision, the sort of vision that Borland used to have before it started acquiring companies to build ever-more-expensive tool suites.

If CodeGear has the funding and autonomy to bring that vision to fruition, it could succeed. I hope it does.

Alan Zeichick is editorial director of SD Times. Read his blog at ztrek.blogspot



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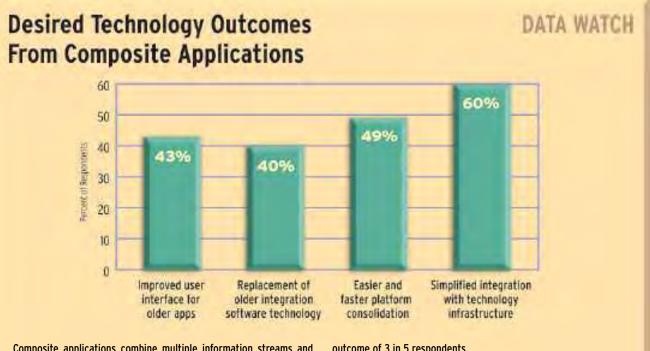
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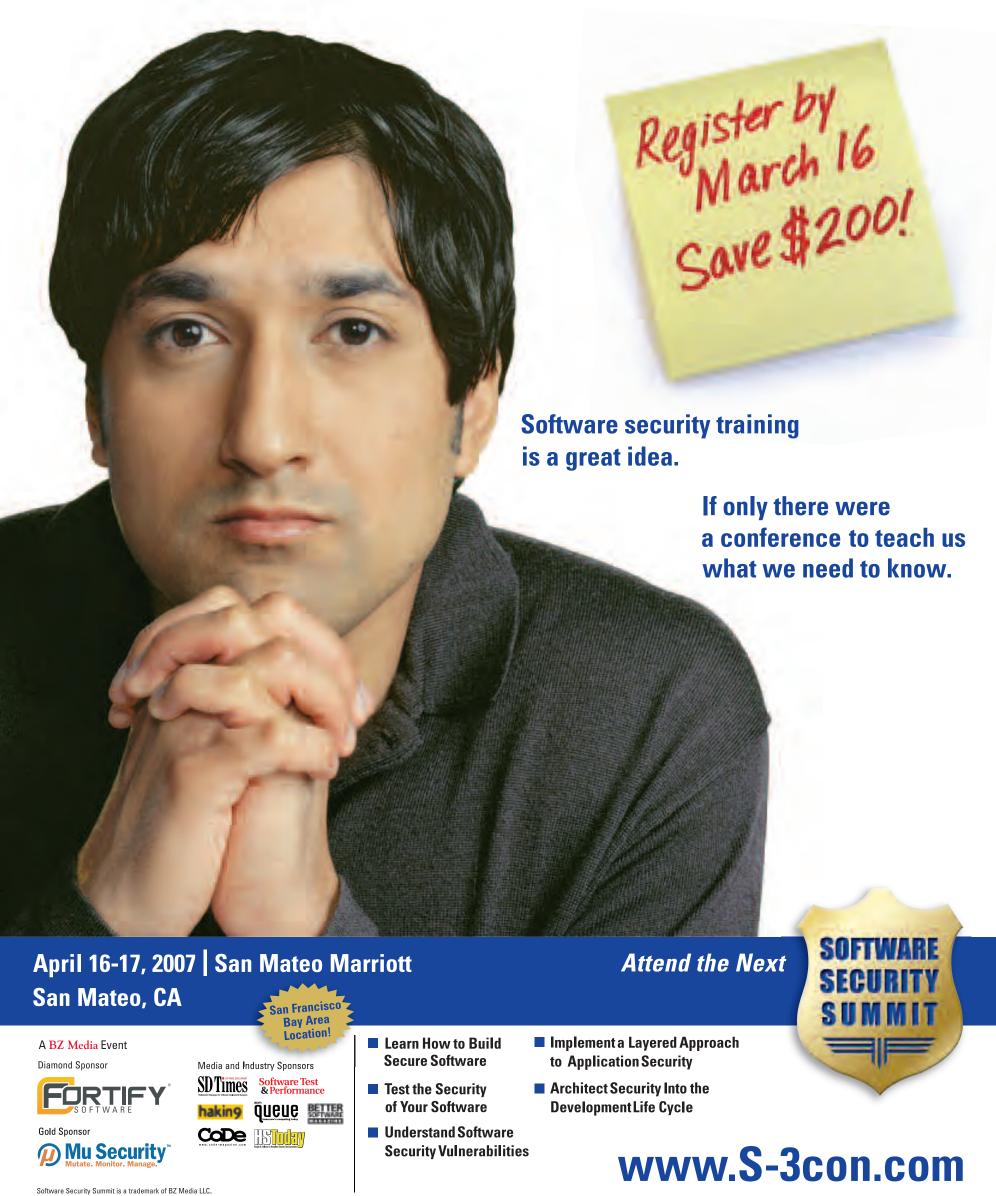
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Composite applications combine multiple information streams and Web services to permit a new degree of flexibility in application development. A November 2006 report from the Aberdeen Group concludes from a survey of "nearly 135" enterprises that, although an organization may not have a fully developed service-oriented architecture (SOA), the emerging technologies are stable enough that companies have begun implementing composite applications anyhow. Improved user interfaces, platform consolidation and technology replacement were all identified as objectives of a significant number of Aberdeen's respondents. Simplified integration was the desired outcome of 3 in 5 respondents.

The authors of "How SOA Standards Are Accelerating Business Change" concluded that the level of staff experience is an important factor in the success of a composite application, as is the willingness to abandon efforts and tools that don't meet the needs of users and developers. They also noted that the testing and deployment stages still represented a challenge to organizations that were surveyed for the report, implying "process immaturity" and the challenges presented by the complexity required to deliver a polished Web experience.

Source: Abendeen Group



Windows & .NET Watch

Brien |

Estimating the Known Unknowns

hose marching under the agile banner, not satisfied with their routing of requirements documents, their conversion of the unit testers and their reduction of the CASE battlements, and yet recognizing that the ground has not yet been prepared for battle that shall forever decide the role of Pair Programming (aka Ragnarök), have apparently decided that cost and schedule estimation shall be the next to fall. I think they overreach. It is possible to speak, with certainty, about dates, capacities, costs and staffing. It is possible to develop a budget that extends over several quarters, to deliver before some crucial date, and to assign programmers to a project in a way that keeps them busy but not crushed.

Reasonably accurate estimates, though, have three problems: They often fall short of the dreams of management, they require diligence to produce, and they invariably contain caveats whose violation will (invariably) increase costs and effort. There are easy answers for each of these problems: Lie to appease management, cut corners on the estimation process because everyone knows it won't work anyway, and keep your resume updated. These easy answers perpetuate the myth that accurate estimates are not just difficult, but impossible to produce.

"[Rather than spend time developing an accurate estimate,] wouldn't it be better," I was asked by a prominent Agilista, "delivering working software on a regular basis?" The phrase "working software on a regular basis" is one of the favorite canards of agile fanatics, glossing over the definition of "working" and "regular."

To management, "working software" means a system that performs a significant business function in coordination with existing systems. It doesn't mean "compiles" or "passes the unit tests we wrote." To management, it isn't working until widgets can be ordered online, tracked through fulfillment and billed. You and I might see that as three differ-

ent systems that can be developed incrementally, but developing and tracking software using "inch-pebbles" rather than "mile-stones" is hardly a 21st century innovation. As for "regular" delivery, the clocks of the business world tick to the pendulums of quarters and years, and the idea of deploying new software every month is a "benefit" that most companies would just as well forgo.

Perhaps the greatest reason that software estimation is held in low esteem is that it requires diligence. Like the C programming language, software estimation works but is not forgiving of laziness. Every good estimation technique I know of requires multiple passes over the source material, pushing down to an uncomfortable level of detail, rooting out ambiguity, facing uncomfortable truths

about programmer productivity, and so forth. When such details are skipped, what you have is gut instinct dressed up in enough finery to pass for an estimate, but no more likely to be helpful than a C program that skips over memory management.

I happen to use my own variation of function point counting, but all more formal

estimation techniques are essentially the same: Estimate the system's "volume" by scouring the use cases and looking for alternate scenarios. As you gather pieces, categorize their complexity and, if that's intractable or ambiguous, dig deeper. Perfect requirements, another mythical entity, are not necessary, but a screen count is. As the "known knowns" and "known unknowns" accumulate, a spreadsheet or algorithm raises the volume by some exponent significantly greater than 1.

Software estimation requires technical expertise and an understanding of implementation at least good enough to be a solid bull detector. Programmers are an optimistic lot and, having said something would go quickly, are loathe to backpedal at their first glimpse of a pitfall.

Most new systems are far more modularized than systems of old and therefore can be developed at higher rates than the averages you might find by casual Googling. A system built of 10 interoperating services, each a few thousand lines of code long, can be built significantly faster than a monolithic system with the same line count, a key benefit of serviceoriented architectures.

Will requirements change? Yes. Will aspects be hairier than they appeared initially? Sure. Reversed decisions, long nights, devastating last-minute requirements changes, missed deadlines? If you have to ask, you haven't been in the software development business very long. But more formal software estimation techniques can give you a solid probability-based view of what can be accomplished in a year or 18 months and can give you a solid foundation for dealing with the problems as they arise. It might not be the Utopia the extremists envision, but it is good business. ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.





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Feeling Groovy at Last

fter many delays, the Java scripting language Groovy is finally shipping. The 1.0 release became official the first working day of this year, and it promises to bring lots of good things to many a Java developer.

Groovy is a dynamic scripting language that was purpose-built for the Java platform. By this I mean that it is not the port of another idiom (in the Jython, JRuby mold), but a language that was designed for the JVM and specifically for use by Java developers. The goal which appears to have been met—was to provide a simplified syntax for much of Java's notoriously wordy code.

Groovy does away with the tediousness via lots of syntactic sugar that makes Java development really a pleasure. For example, when you define a class, Groovy automatically creates default getters and setters for fields. Lists and maps—Java's most overused collections—are first-class members of the language. You declare and load them with values in a single concise statement akin to Java's syntax for arrays.

Groovy also offers closures, which are a technique made famous by Ruby. Closures have many definitions, and a rather dull meme in programming language blogs these days is arguing over what constitutes a closure. Putting aside the academics' sparring, closures are essentially anonymous blocks of code that are easily attached to a statement or function. They make it simple to specify an action without having to define a class and then a method. Instead, the actual code to be executed is stated inside

parentheses and attached to Integration Watch another action. For example, a closure called find, let's say, can be attached to a collection iterator to look for a specific element. The closure contains only the equality statement to test for the desired element. Another one, called each, can be attached to indicate actions that should occur for every

element in the collection. This design makes for concise code that is readily understandable.

Groovy offers lots of other convenience features in areas where Java and other traditional languages tend to be weak, such as duck typing and special syntax to simplify common tasks like XML processing.

Last year, I discussed my frustrating search for a good scripting language for Java. I ended up using NetRexx, which is

an easy-to-learn and elegant language. However, it has not been updated in a long time and has nearly no community around it. These things matter, especially once you get into serious coding. Groovy has all these items in place.

For starters, it has an active community that responds quickly to queries and

doesn't make newbies feel like they are unwashed ignoramuses. This community has given Groovy many of the accoutrements needed by a robust language: plug-ins for most IDEs, including Eclipse, Jet-Brains IntelliJ IDEA and Net-Beans; JUnit support (in fact, some developers use Groovy especially for the ease of writing JUnit tests on regular Java

code); and a plug-in for Ant (called Gant).

Moreover, Groovy integrates completely with Java. You can call Java classes and access Java objects natively. In the other direction, you can embed Groovy into Java apps easily. As a dynamic language, Groovy can be run from the command line either as an interpreter or through the usual compile process. The software and the basic docs are available as open source from groovy.codehaus.org. The definitive book on the language is Manning Press' excellent "Groovy in Action," which was written by several project leads.

The language's long incubation has enabled Groovy-based projects to develop right along with it. One of these is Grails (formerly called Groovy on Rails), which provides a framework like Ruby on Rails for Java developers. It transparently uses Hibernate and has support for AJAX front ends, in addition to all the ease-of-use features of the Rails design. (A book on Grails development, "The Definitive Guide to Grails," has just been released by Apress.)

There are many dynamic languages that run on the JVM. Groovy is unique in that it combines several features: It is purpose-designed for Java developers; it is supported by a JSR (JSR 241); it is supported by several vendors such that the chief technical lead works full-time on the language; and it has a robust tool set and an active community. For these reasons, I think Groovy has legs and could well emerge as the primary scripting language for the JVM.

I hope some of its features will rub off on the Java language itself, as Sun continues to find ways to make Java programming easier. In the meantime, have a look at Groovy and tell me if you don't agree.

Andrew Binstock is the principal analyst at Pacific Data Works. Read his blog at binstock.blogspot.com.

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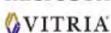
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Perking Up

Industry Watch

n what can hardly be classified as an upset, Google was named by Fortune magazine as the best place to work in America for 2007. Immediately, thoughts ran to the 11 gourmet restaurants located on its Mountain View, Calif., campus, the pool room (literally, a room with a lap pool), rock-climbing wall, and free car washes and oil changes. Did I mention free on-site medical care?

Sure, it's easy to give perks when your stock price is more than US\$450 per share and you're the hot new darling of both Wall Street and Silicon Valley.

But do perks alone define the best place to work? A lot of people sure think so. I remember, back in the 1970s, when Computer Associates

opened its Long Island office in Islandia, N.Y.—a town that no one who lived there even knew existed. Newspaper articles of the day described a new kind of company that offered free child care, free breakfasts and lunches and mandated an exercise period to help relieve stress and keep the body and mind sharp. At the time, these were thought to be unusual business and management practices brought from the Orient by company founder Charles Wang. And everyone thought, "Wow, what a great place to work!

Unfortunately, CA has been in the spotlight lately for reasons other than its great perks. Folks still are talking about round after round of layoffs and financial scandals that continue to dog the software giant—in mid-January, former chief counsel Steve Woghin was sentenced to two years in jail for his role in the US\$2.2 billion fraud.

And as we saw during the dot-com era, companies were outdoing themselves with perks and financial incen-

> tives to attract talented, skilled and motivated workers—sailing club memberships, massage therapy, pet health insurance and much more. But when the bubble burst, many—nay, most—of those companies went bellyup, and those same talented workers were thrown into unemployment—motivated now by finding a new job. So,

ultimately, how good could those companies have been to work for?

What about pay? Does that make a job better than any other? Again, a lot of people think so, only to be caught in a salary trap that holds them in a place that is not professionally rewarding, or that is on an unstable foundation, or where their co-workers show up simply to pick up a check.

Behind the Fortune list is the Great Place to Work Institute (no, I'm not making that up), which explained that while perks and salaries are hugely important to workers, as much emphasis in the rankings was placed on trust, pride and camaone where workers "trust the people they work for, have pride in what they do, and enjoy the people they work with."

The institute's Web site goes on to say that it's the relationships that determine whether or not a company is a great place to work—the relationship between employees and their bosses, employees and their jobs, and employees and other employees.

Lines of communication are open. Respect is shown for the ability of the employees, and collaboration replaces authoritarianism, so people can take pride in their contributions to the company. People are treated fairly, in an equitable way, and feel they can "be themselves" among their fellow team members. This, according to the institute, is what makes a company truly great.

So it's no surprise that Google receives about 1,300 resumes a day from young, talented people who want to work in that kind of environment, according to Fortune.

I've worked at jobs where I felt that co-workers were slacking, or where bosses made unreasonable demands and failed to listen to what I had to say. I've worked at jobs where my immediate supervisors took credit for my ideas while standing with a figurative foot on my neck. I've even had a job where I got physically sick every morning just thinking about having to go into that office one more day, because the work went against my sense of ethics and fairness.

But, hey, it was close to my house, and the pay was great. ■

David Rubinstein is editor-in-chief of SD Times.

EVENTS CALENDAR

RSA Conference

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SCALE 5x (Southern California Linux Expo)

Feb. 10-11

Los Angeles

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Feb. 11-16

Tampa, Fla. SHARE www.share.org

LinuxWorld Feb. 14-15 OpenSolutions Summit

IDG WORLD EXPO

www.linuxworldexpo.com/live/14

EclipseCon Santa Clara

March 5-8

ECLIPSE FOUNDATION www.eclipsecon.org/2007

Game Developers Conference

March 5-9

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Developer **Relations Conference**

March 12-13

San Francisco **EVANS DATA** www.evansdata.com/dro

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March 19-23

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March 26-29

April 15-18

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April 1-5 **Embedded Systems** Conference

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Web 2.0 Expo

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Software Security Summit April 16-17 San Mateo, Calif.

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raderie. A great place to work, they say, is

board has already given its nod, unanimously recommending the proposal . . . Say, "Hello, Moto." In the near future, Motorola will extend its services from the shop floor and corner office to the cash register and everywhere in between. It has finalized its purchase of Symbol Technologies; the merger is now a definite agreement. Symbol's mobility solutions integrate a slew of data capture products and RFID systems with mobile platforms. Symbol contributes 30 years of enterprise experience to Motorola. In its entirety, Motorola's platform will secure and manage mobile devices like the Motorola Q or wearable computers from Symbol, provide data access, and deploy collaborative tools and applications. Those capabilities come as a result of Motorola's recent purchase of Good Technologies. Symbol president Sal Jannuzzi, an industry veteran, has been tapped to head Motorola's new enterprise mobility unit.

EARNINGS: Apple reported that its first-quarter profit soared 78 percent as consumers bought iPod media players in bundles. The company posted a net profit of US\$1 billion on record revenue of \$7.1 billion for the period that ended Dec. 30, which is up from \$565 million a year ago. During the quarter, Apple shipped 1.6 million Macintosh computers and 21 million iPods, and sales of the marketleading music players accounted for nearly half the total of company earnings. Apple's total number of iPod sales now stands at about 90 million units since it first went on sale in October 2001.

within 20 days for the acquisition to be complete. The Ubiquity

BUSINESS BRIEFS

The Software & Information Industry Association (SIIA) is preaching corporate responsibility following its collection of more than US\$1 million from software piracy settlements. Several firms recently found in violation of software license agreements must delete unlicensed copies, purchase replacement software, agree to implement software management policies and undergo future compliance audits. SIIA states that such punitive measures are avoidable if companies—large and small—remain vigilant about software management practices and manage their risk. The December settlements bring a round of 11 cases to a close. Ciberlynx, Petroleum Heat and Power and Preventative Maintenance Company are among those named in the release. SIIA is a trade association representing the software and digital content industry. Its anti-piracy division proactively counters software and content piracy by attempting to strike a balance between law enforcement and its education campaign . . . Avaya is seeking to extend its communications software product portfolio by acquiring Ubiquity Software, a developer of SIP-based product solutions. The Ubiquity software platform caters to service providers, systems integrators, ISVs and channel partners in the telecommunications industry that are on the path toward all-IP networks. Essentially, it is coupling together communications technologies with business processes and making this type of integration easier for its customers to achieve. Ubiquity contributes its platform. service creation framework and applications. Shareholders must accept the tender offer—valued at an estimated US\$144 million—



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